
Bernd
Heine

Auxiliaries

Cognitive
Forces
and
Grammaticalization

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Cognitive Forces and Grammaticalization

BERND HEINE

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Preface

The term *auxiliary* has been applied by a number of people working in different frameworks, and it has found a variety of divergent uses; the question as to whether auxiliaries constitute a category of their own or whether they have to be described as being part of some other category has given rise to various controversies in the course of the past decades of the history of linguistics. The main purpose of the present monograph is to propose a new account of auxiliaries. This account is based on the framework of grammaticalization theory.

A number of people have contributed in some way or other to this work. My gratitude is due in particular to Eithne Carlin, Ulrike Claudi, Talmy Givón, Martin Haspelmath, Andreas “Donald” Lessau, Thomas Müller-Bardey, Heinz Roberg, Christa Kilian-Hatz, Christa König, Kossi Tossou, Helma Pasch, Franz Potyka, Hans-Jürgen Sasse, Thomas Stolz, Holger Tröbs, and Erhard Voeltz for valuable comments on an earlier version. I also wish to thank the *Deutsche Forschungsgemeinschaft* (German Research Society) for having sponsored part of the research on which this monograph is based.

B. H.

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Abbreviations

A	aspect marker	NEG	negation
ABS	absolutive case	NOM	nominative case
ADVE	adverb	NOMIN	nominalization marker
AUX	auxiliary	O, OBJ	object
C	complement	OBL	oblique
COM	comitative	PART	participle
CONT	continuous aspect	PERF	perfect
DAT	dative extension	PFV	perfective
DEF	marker of definiteness	PL	plural
DEM	demonstrative	PLUP	pluperfect
DEP	dependent marker	POT	potential
DET	determiner	PROG	progressive aspect
ERG	ergative	PRS	present tense
F	feminine	REL	relative clause marker
FACT	factative	S	subject
FUT	future marker	SG	singular
IMP	imperfective	SUBJ	subjunctive
INCH	inchoative	TERM	terminative
INF	infinitive	V	verb
LOC	locative	1	first person
M	masculine	2	second person
NAR	narrative marker	3	third person

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AUXILIARIES

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I

The State of the Art

Languages don't change; people change language.

Croft 1990:257

Recent research in cognitive linguistics and grammaticalization has brought about a number of new findings on the nature of linguistic categorization. This research has revealed in particular that analyzing language structure in terms of categories based on necessary and sufficient conditions for membership only accounts for a limited range of speech behavior. What it suggests in particular is that in addition to these, more flexible taxonomic principles are required to take care of such phenomena as gradience and prototype structure, and to account for problems such as linguistic ambiguity, polysemy and other kinds of semantic relationship. While the scholars participating in this new discourse adhere to a variety of different perspectives and frameworks, there is agreement among many of them on a number of points, such as the following:

1. Rather than viewing language as a state, it is conceived of as a dynamic entity, and linguistic behavior is described as a process rather than a state or a product, or a historical tradition.
2. Instead of analyzing it as a closed, self-contained system, language is interpreted as an entity that is constantly shaped by external factors such as cognitive forces, pragmatic manipulation, history, etc.
3. This means that language cannot be explained satisfactorily with reference to linguistic variables only; rather what is required in addition are extra-linguistic parameters relating to how we perceive the world around us, and how we utilize the linguistic resources available to us to conceptualize our experiences, and to communicate successfully.

Such observations are not new; many of them have been expressed in some way or other in the writings of nineteenth century linguists such as

Wilhelm von Humboldt, Ph. Wegener, Georg von der Gabelentz but were ignored in the structuralist tradition of twentieth century mainstream linguistics. It is only in the course of the recent decades with the development of new paradigms such as discourse pragmatics, cognitive linguistics and grammaticalization studies that some of the dynamics underlying language structure came to be rediscovered.

The notion “auxiliary” has figured prominently in many linguistic approaches, variously associated with a morpheme or word class, a syntactic category, a functionally or semantically defined entity, or with any combination of these. At the same time, its validity was also challenged, to the extent that in some linguistic traditions the term *auxiliary* has been eliminated entirely from the list of professional terminology. The main purpose of the present work is to review the significance of this notion and to propose a new understanding of it in the light of the new findings alluded to. It will be argued that many of the problems that are associated with auxiliaries can be solved once we look at the forces that can be held responsible for the rise and further development of grammatical categories.

This work does not aim to offer a theory of auxiliation; such an endeavor would be premature considering the extraordinary variety presented by auxiliary constructions in the languages of the world and the little we know about them, nor does it attempt an encyclopedic treatment of auxiliaries, for which see Steele et al. (1981). The primary concern will be with the cognitive forces that appear to be responsible for the genesis and further development of “auxiliary concepts” relating to the domains of tense, aspect, and modality, and with the effects these forces have upon the particular shape of canonical auxiliary constructions. To this end, a diversity of views that have been expressed in the past on the status of auxiliaries are briefly discussed in Chapter 1. In Chapter 2, a framework is proposed to deal with the questions raised in the course of Chapter 1, and the framework is related to alternative approaches and variables (Section 2.7.3). In Chapter 3, some of the theoretical notions introduced in Chapter 2 are looked at in more detail, and priority areas for future research are pointed out. Some conclusions are presented in Chapter 4, with emphasis on how the observations made could be relevant for a more comprehensive theory of grammar.

1.1 Problems

In many languages, experts will disagree with one another in defining the term *auxiliary*, or in determining the range of entities that should be subsumed under this label, or in deciding whether there is a need for such a label in the first place. While some argue or imply that auxiliaries must exhibit verblike features to some extent, others maintain that this is in no way essential to their nature.

For a number of authors, including the present one, the use of the term *auxiliary* is primarily associated with a limited range of notional

domains, most of all with the domains of tense, aspect, and modality (see Section 1.3). In quite a few works, however, the term is applied to a much wider range of grammatical and/or lexical phenomena including expressions serving derivative, pro-verb-like, adpositional and other purposes (cf., e.g., Capell 1976) and, in fact, up to now there does not appear to be any typologically meaningful way of delimiting the range of conceptual, morphosyntactic or other properties that an auxiliary, or a “canonical auxiliary” for that matter, should exhibit (see Section 1.7).

Part of the problem surrounding the notion auxiliary is reflected in terminological diversity, labels such as “auxiliary verb,” “verbal auxiliary,” “helping verb” (Falk 1984) and the like figuring in discussions on this subject. Most of all, this problem is associated with the question as to the distinction between “auxiliary” and “AUX,” a category label introduced by Chomsky in 1957. Pullum (1981:436) rightly points out that it is commonly but mistakenly assumed that “AUX” is postulated as the category to which the traditional auxiliaries of English belong. Steele (1978) and Akmajian et al. (1979:3) emphasize that the category AUX need have no resemblance to verbs whatsoever: “It is commonly assumed, first, that the AUX will be adjacent to the verb and, second, that the AUX will be verblike. Neither assumption [. . .] is necessarily characteristic of AUX” (Steele 1978:15). The auxiliary verb, on the other hand, “is actually verblike” according to Steele: “This is more than saying that it can be inflected like a regular verb. The auxiliary verbs are generally verbs in their own right, in other constructions” (Steele 1978:23). Steele (1978) distinguishes two types of AUX in the languages surveyed by her: one consisting entirely of auxiliary verbs, and another that does not, although it may contain them in addition to other kinds of elements.

In a number of treatments on the subject, the terms *auxiliary* and *AUX* co-occur, and it does not always become clear whether, how, or to what extent they should be distinguished. A review of the relevant literature suggests that the distinction relates in most cases to one or more of the following attributes (cf. especially Chomsky 1957:38ff.; Steele 1978; Heny & Richards 1983a:xiii; Marchese 1986):

1. “AUX” stands for a syntactic category or node, while “auxiliary” refers to a “loose class” of elements—however that class is to be defined.
2. “AUX” stands for a grammatical category and “auxiliary” for the members of that category.
3. “AUX” is used in formulaic expressions and “auxiliary” in running text.
4. While “auxiliary” refers to an item typically denoting distinctions of tense, aspect and/or modality, “AUX” is a more comprehensive unit that includes information on, and/or elements for, tense, aspect, modality, subject agreement/marking, object agreement/marking, negation, etc., or any combination thereof.

Furthermore, there appears to exist some perplexity as to whether the abbreviation should be written “AUX” or “Aux” (cf. Abraham 1990:200). Steele et al. (1981:19) propose the following distinction between the two:

“Aux” refers to a language-internal category, for example, to the constituent proposed in certain analyses of English grammar, while “AUX” stands for what they call an equivalence class, a cross-linguistically defined entity that may subsume the English “Aux.”

Chomsky introduced the abbreviation “Aux” to state the occurrence of “auxiliaries” found on such English verbal roots as *take*, as in *takes*, *has* + *taken*, *will* + *take*, *has* + *been* + *taken*, *is* + *being* + *taken*, etc., by adding rules (1) and (2) to the grammar,

1. Verb \rightarrow Aux + V
2. Aux \rightarrow C(M)(*have* + *en*)(*be* + *ing*)(*be* + *en*)

where “M” stands for the items *will*, *can*, *may*, *shall*, and *must*, and “C” is developed into any of the morphemes *S*, *past*, and zero (Chomsky 1957:38–39). It does not become entirely clear, however, how the relation between, say, the symbol “C” and what he variously refers to as “auxiliary verbs” or “auxiliaries” is to be defined. Lyons (1968:256) simply notes that “Aux” has a “mnemonic connexion” with “auxiliary verb,” and Akmajian et al. define “AUX” as a category “—i.e., distinct in its syntactic behavior from the behavior of other syntactic categories labeling a constituent that includes elements expressing the notional categories of Tense and/or Modality” (Akmajian et al. 1979:2), but do not elaborate on how to distinguish between “AUX” and auxiliaries (cf. Pullum 1981:436ff.; see Section 1.6). Not infrequently, confusion surrounding the use of the term *auxiliary* can be observed, relating in most cases to the question as to whether auxiliaries are understood as notional, syntactic, morphosyntactic, or phonologically defined entities, or whether their analysis is based on a descriptively or a more prescriptively oriented approach.

Since the abbreviation “AUX,” or “Aux,” is strongly associated with one specific school of linguistics, this abbreviation will be avoided in the following chapters, except when referring to works or contexts where the abbreviated form is used.

If in fact auxiliaries, or “AUX” for that matter, can be defined as a distinct category, which place should such a category occupy vis-à-vis the other categories that make up grammar? Is it part of the “verbal word” or “Verb,” as structure (1) suggests (Chomsky 1957), or of the verb phrase or predicate phrase (Chomsky 1965:106), or does it form a constituent that is independent of the verb phrase or predicate phrase (e.g., Akmajian & Heny 1975) or even of the clausal proposition (Fillmore 1968; see Section 1.5)? Furthermore, what is its position vis-à-vis the main verb: Is it dependent on the latter, as some argue (e.g., Matthews 1981, Huddleston 1984:128), or does the main verb depend on it, as others maintain (Edmondson & Plank 1976, Schachter 1983; see Sections 1.5 and 3.2)? A number of other authors again have been concerned with a different but related issue, namely: If there is a morpheme or word class, or constituent type called “auxiliary,” should it be treated as part of the morphophonology, the morphology, or the syntax of a given language?

This raises the further question as to whether the elements subsumed under the label “auxiliary” or “AUX” do in fact form a distinct constituent within the clause. Whereas those working in the tradition established by Chomsky (1957) are inclined to answer this question in the affirmative, as is suggested by (1), there are others who are not. Langacker (1991:198ff.) in particular argues that the English auxiliary comprises a series of predication each fulfilling a particular semantic function and, hence, that it is not a grammatical constituent. His claim is supported by syntactic criteria, for only the first auxiliary appears before the subject in a question, as can be seen in (3). Instead of (1) and (2), Langacker therefore proposes (4) as a more appropriate formula for the clausal head, which is said to consist of the content verb (V) plus a number of auxiliary elements.¹

3. Has she been washing the car?

4. (*have* (PERF₄ (*be*₁ (-*ing* (*be*₂ (PERF₃ (V)))))))

It would seem that Chomsky and Langacker have very different things in mind when talking about auxiliaries even though both are mainly concerned with one and the same language, namely English. Are there any obvious, cross-linguistically valid properties that are diagnostic of auxiliaries and would allow us to set them off from other kinds of linguistic entities (cf. Section 1.7)?

Furthermore, attention should be drawn to the fact that there are also the various philological conventions many of which have their own uses of the term *auxiliary*. If one were to follow the Indo-European tradition, for example, one might add as a definitional property of auxiliaries the requirement that they must be the only inflected forms in the verbal complex (Ramat 1987:5). In some traditions of African linguistics, on the other hand, forms inflected for person, tense, etc. are allocated to the category of verbs while auxiliaries are largely or entirely uninflected items. Thus, in his treatment of Ik, a Kuliak language of Northeastern Uganda, Serzisko (1991:112ff.) defines auxiliaries as particlelike items requiring a finite verb as a predicate, while modals and aspectuals having nonfinite verbs as their complements are referred to as propositional verbs. Note also that in some traditions of Mayan linguistics, the items referred to as auxiliaries differ from ordinary main verbs in that they have a reduced range of verbal affixes. Tzotzil auxiliaries, for example, do not have person affixes, which are invariably attached to the main verb—irrespective of whether the latter is preceded by an auxiliary or not (Haviland 1991:5–6). In a number of works on Australian linguistics again, the term *auxiliary* is extended to uses involving compoundlike and derivational structures (see Dixon 1976). An interesting situation appears to obtain in Ngarinjin where each verb always occurs with a particular auxiliary, the latter being marked for number, tense, modality and aspect. The ten “auxiliaries” found in this Australian language thus divide verbs into ten classes or “genders” (Dixon 1972:15).

In fact, a remarkable number of entities figuring in linguistic works have been called auxiliaries, such as inflections, conjunctions, certain types

of numerals, etc. (see, for example, Benveniste 1968:86); for Gazdar, Klein, Pullum and Sag (1985:114), for example, the English infinitive marker *to* is a “highly idiosyncratic item” that they classify as a nonfinite auxiliary verb; cf. also the practice of some authors (e.g., Hartmann & Stork 1972:24) to use the term *auxiliary* for any word that has no independent function of its own and/or that can be only used in combination with other words. Our concern here will be with auxiliaries in a narrow sense, in particular with elements that tend to be referred to also as verbal auxiliaries, auxiliary verbs, and the like (see Sections 1.6 and 2.6).

1.2 Hypotheses

1.2.1 The autonomy hypothesis

According to one position, perhaps most commonly expressed in linguistic works since 1957, auxiliaries, or elements subsumed under the label “AUX,” constitute a distinct category, different from verbs and other categories. Puglielli (1987:346), for example, notes that there is by now “general acceptance” of the hypothesis that AUX “is a universal category, even if there are of course differences in the realization of this category in different languages.”

This view has in fact been taken by a number of authors (e.g., Jackendoff 1972; Lightfoot 1974; Steele 1978; Akmajian et al. 1979; Palmer 1979b, 1986; Steele et al. 1981; Plank 1981; Jelinek 1983; Marchese 1986; Ramat 1987; Puglielli 1987). Steele (1978), for example, suggests that this category contains a certain notional set involving elements that are sentential in scope, in that they place the situation described in the sentence in a certain time (tense), ascribe a temporal contour to it (aspect), and assess its reality (modality), and Palmer (1979a, 1979b) simply points out that the syntactic properties of English auxiliaries cannot be reconciled with those exhibited by main verbs. For Matthews (1981:61), therefore, the uses and meanings of auxiliaries fall within the field of the grammarian, whereas the individual meanings of full verbs are left to the lexicon.

1.2.2 The main-verb hypothesis

According to another major position, auxiliaries are underlyingly verbs or verbs exhibiting some “deviant” behavior. In 1969, Ross presented twelve arguments to show that English auxiliaries and verbs are both members of the same lexical category; like full verbs, auxiliaries are allocated by him to the category “V” and are said to have the feature [+V]. Ross (1969:77–78) distinguishes, however, the English items *have* and *be* from items such as *eat* or *sing* in that the former have a feature [+Aux] while the latter have [–Aux]. Subsequently, a number of studies have been devoted to revealing the verbal nature of auxiliaries (e.g., McCawley 1975; Keyser & Postal 1976; Hudson 1976; Huddleston 1976b; Pullum & Wilson 1977; Muf-

wene & Bokamba 1979; Pullum 1979; Gazdar, Pullum & Sag 1980; Pullum 1981; Schachter 1983). Pullum and Wilson (1977:742–43), for example, maintain that the category of verb in English also includes the auxiliaries as a special subset, despite the fact that there are seven clear criteria to distinguish auxiliaries and modals from main verbs (see also Huddleston 1974, 1976b). The proponents of this hypothesis usually argue that there is neither syntactic nor any other evidence for defining a category “AUX,” neither for English or Luiseño (Kaisse 1981; Pullum 1981), nor for any other language studied by them, and that assuming that there exists such a category would render language description unnecessarily difficult.

1.2.3 Gradience

Most discussions on the status of auxiliaries have centered around the controversy between the autonomy and the main-verb hypotheses. A few authors have argued, however, that there is one more position that is equally relevant for understanding the behavior of auxiliaries. According to this position, there is no boundary separating auxiliaries from main verbs: The two are said to form a continuum or gradient. Such a position is associated on the one hand with the paradigm of grammaticalization studies, most of all with the work of Givón (1975; 1979; 1984; 1989); on the other hand it is connected with the notion of continuum (cf. García 1967:866) or gradience (Bolinger 1980). What most of these authors have in common in particular is that they are not confined to a rigidly synchronic perspective; rather they include diachronic considerations in order to account for the nature of auxiliaries. Bolinger’s characterization of what he calls quasi-auxiliaries gives an impression of this perspective:

The historical fact needs to be seen in its synchronic frame: the forms are in transition, and exhibit all the refractoriness of their uncertain destiny; they are settled in some parts of their usage, unsettled in others.

Bolinger 1989:297

A purely synchronic gradience model to deal with the various uses of English modal auxiliaries has been proposed by Leech and Coates (Coates & Leech 1980; Leech & Coates 1980); for a critical evaluation of it, see Coates (1983:11).

1.2.4 Auxiliary as a universal category?

Usually, the proponents of the autonomy hypothesis are aware of the problems associated with a definition of auxiliaries as a cross-linguistic category. Having argued that AUX is a “universal category” since it is distinguished in at least two different languages, English and Luiseño, Akmajian et al. (1979:57) suspect that AUX may even be a “necessary universal category,” and a similar position is maintained by Steele et al.

(1981). In fact, for most adherents of the autonomy hypothesis, the category of auxiliaries does not only constitute a distinct entity within a given language, it also does so on a universal level (Steele 1978).

Such claims are refuted by other students of the subject. Kaisse (1981), for example, demonstrates that the syntactic and phonological behavior of the Luiseño particles discussed by Akmajian and associates is a universal characteristic of *clitics*, rather than being suggestive of a distinct category AUX (see also Pullum 1981), and Reuland (1983) argues that AUX in the sense intended by Akmajian et al. (1979) and Steele et al. (1981) is not a universal category. Other adherents of this hypothesis again maintain that auxiliaries are a relevant unit of linguistic categorization in some but not in all languages. For Jenkins (1972:9–12), for example, the syntactic differences between English and German are such that modal verbs are main verbs in German though not in English (see Section 2.7.1). Abraham (1990:201) lists Latin, Greek, (early) Gothic, and Old High German among the languages without auxiliary verbs (see also Matthews 1981:96), even though the last named language had an equivalent for *be* as an auxiliary, and Green observes with reference to Spanish that “if an auxiliary is defined as a grammatical marker of tense and aspect devoid of any lexical meaning, then Spanish has no true auxiliaries” (Green 1987:258–59). As is apparent from such characterizations, the question of whether a language does or does not have auxiliaries crucially depends on the kind of criteria adopted.

Among those again who take the universality of auxiliaries for granted, there are, on the one hand, some who assume that auxiliaries are a characteristic of *all* human languages. Such authors either adopt a definition of auxiliaries that is wide enough to take care of the situation in any language, or they draw on a theory that axiomatically assumes or presupposes the presence of auxiliaries, or both. On the other hand, there are those for whom auxiliary is a universal human *facultas* that finds formal expression in many though not in all languages. Steele (1978) appears to have something to this effect in mind when she writes:

To call AUX a universal category is not to argue that every language will choose it. But the overwhelming majority of languages in this particular language sample do; SOUTHEASTERN POMO is the one exception.

Steele 1978:42

In most cases it is not possible to establish exactly what the term *universal category* means for a given author. The following alternatives in particular appear in some form or other in the literature on the subject:

1. There is a category AUX and all languages have it and consistently mark it.²
2. While all languages have it, it need not be consistently marked; for example, it may have “zero expression.”
3. While all languages have AUX, it need not be formally expressed in a given language.

4. The majority of human languages have AUX, and it is therefore justified on statistical grounds to call it a “universal category,” even if there are some languages that do not have it.

Palmer (1983:206) notes that the arguments for auxiliaries as main verbs “are often very dependent upon the theoretical model being proposed.” While this is certainly right, it also applies in a similar way to the arguments put forward in favor of the autonomy hypothesis. A review of the available literature suggests that which position is adopted by a given author is not so much determined on empirical grounds but rather on the basis of the theoretical framework adopted.

1.2.5 Other positions

In addition to these proposals to find the appropriate pigeon-hole for auxiliaries, there are a number of alternative positions. First, there are those for whom the autonomy versus main-verb controversy is based on an inadequate theoretical foundation and becomes irrelevant once one adopts a different perspective. Langacker, for example, comes to the conclusion that “the whole issue is a monstrous red herring deriving from the congenital confusion in generative grammar among, on the one hand, the concepts SENTENCE, CLAUSE, and PROPOSITION [. . .], and, on the other hand, the concepts MAIN VERB, VERB, and PREDICATE” (Langacker 1978:881).

For others again, this is simply not an issue to be concerned with. Gleason, for example, after observing that the items *can*, *could*, *will*, *would*, *shall*, *should*, *may*, *might*, and *must* have to be recognized as a clearly marked class in English grammar, arrives at the following conclusion:

Whether it [= this class; B.H.] is treated as a highly specialized subclass of verbs (auxiliary verbs) or as a separate class closely associated with verbs (verbal auxiliaries) does not matter greatly.

Gleason 1995:104

Note also that according to Palmer (1979b:3), the issue is not one for which a clear-cut “Yes” or “No” can be given.

Third, mention should be made of a compromise solution according to which verbs and auxiliaries, while being different in their morphological and syntactic behavior, are both part of what Pullum and Wilson call one and the same “super-category”:

Defenders of the AUX analysis would now agree that auxiliaries belong to a category to which main verbs also belong, though they would maintain [. . .] that some members of this super-category have a phrase-structure source other than the VP.

Pullum & Wilson 1977:744

This position is closely associated with the main-verb hypothesis; for Palmer (1979b:1), for example, the issue is not whether auxiliaries are main

verbs or not, but rather what kind of verbs they are, and he decides that they are verbs though of a rather different kind from main verbs. A similar view is expressed by Schachter (1983:150) and Dik (1983:127), the latter arguing that the English auxiliaries *have* and *be* are both verbs “in accordance with their inflectional behavior,” but whereas lexical verbs stem from the lexicon, these auxiliary verbs are introduced through expression rules. Among those again who subscribe to the “super-category approach,” two main positions can be distinguished. On the one hand, there are those for whom auxiliaries and nonauxiliary verbs are separated by a categorical boundary, that is, that the two belong to different sub-categories of one and the same category. Gazdar et al. (1980) assume that in the phrase structure there is a category V_n that is distinct from other categories and corresponds to what Chomsky proposed to analyze as the category AUX, where “V” refers to the category and “ $_n$ ” specifies rule-defined sub-categories of “V.” On the other hand, there are those who take recourse to componential theory, according to which categories are composites of syntactic or other features. Such authors claim that a feature-based analysis is more appropriate, or more flexible, to capture the similarities between the taxonomic entities involved. A typical example is provided by Radford (1988:154–55), who distinguishes not only between auxiliary verbs and nonauxiliary verbs but also between modal and nonmodal auxiliary verbs by means of two “major categorial features” ([V] and [N]) and two “minor categorial features” ([AUX] and [M]), thereby arriving at the following fourfold classification:

a. Auxiliary verbs	[+V, -N, +AUX]	e.g., <i>be</i> , <i>will</i>
b. Nonauxiliary verbs	[+V, -N, -AUX]	e.g., <i>want</i>
c. Modal auxiliary verbs	[+V, -N, +AUX, +M]	e.g., <i>will</i> , <i>can</i>
d. Nonmodal auxiliary verbs	[+V, -N, +AUX, -M]	e.g., <i>be</i> , <i>have</i>

Similarly, Gazdar, Klein, Pullum and Sag (1985:23) define AUX as a Boolean feature that identifies auxiliary verbs, and for Hudson (1976:150ff.) auxiliaries are full verbs and the difference between auxiliaries and main verbs is handled essentially by means of two features, which are [Aux] and [transitive]. For example, the English item *have* in (1) and (2) to follow is said to have the feature [+ transitive], but the two differ from one another in that in (1), *have* has [- Aux] while in (2) it has [+ Aux]. (3) would be an instance of a [- transitive] use of the same item.

1. Do you have a light?
2. Have you a light?
3. Have you seen him?

One major weakness of feature-based approaches has been pointed out by Langacker (1978:853), who argues that distinguishing a feature [AUX] would be “ad hoc, labeling but not explicating the notion AUXILIARY.”

Fourth, there are the various so-called “mixed positions” that have been proposed to deal with auxiliaries. Jackendoff (1977) and Emonds

(1978), for example, treat the English progressive *be* as a main verb, perfect *have* as a verb that does not define its own S or VP, and the modals as nonverbal (i.e., “AUX-like” entities), and Pullum notes that “it may even be that the majority of generative grammarians now espouse a mixed analysis, though for the most part it is hard to tell, because few authors are explicit enough about the details of the system they assume” (Pullum 1981:435). Most of these “mixed positions,” however, boil down to the twofold division between auxiliaries that behave like verbs and others that do not and, hence, may be called “pure auxiliaries.” Pottier (1961) is a typical example: He distinguishes between full verbs with no conceivable auxiliary functions, those able to act as auxiliaries while possessing lexical meaning and functions, and “true” auxiliaries, which are “not verbs” (see Green 1987:258).

There are, however, some problems with such positions as well. For example, when Pottier (1961) applied his threefold classification to his target language, Spanish, the results were rather odd: Entities that are usually referred to as auxiliaries by grammarians, like *ser*, *estar*, and *tener*, belong to the group of verbs that are able to act as auxiliaries while still possessing lexical meaning and functions, while only *sober*, “to be accustomed to,” qualifies as a “true auxiliary,” since it possesses no lexical meaning—despite the fact that *sober* behaves morphologically like a regular intransitive verb of the second conjugation. Green therefore concludes that “Pottier’s proposal, then, obliges us to recognize a grammatical category with a unique member whose morphological characteristics are typical, not of the adjacent category, but of the most distant one of the system” (Green 1987:258). Similarly, the proposal by Akmajian et al. (1979:20–21) and others to distinguish between *be* and *have* as V, and modals such as *may*, *will*, etc. as AUX, is suggestive of a categorization that appears to be neither notionally nor intuitively compelling, considering the behavior of these items in examples such as the following where (4) contains a form of *be* and (5) the modal *will*.

4. She is coming.
5. Do it as you will.

Fifth, there are those who do not deny the relevance of a linguistic category that takes care of grammatical functions commonly expressed by auxiliaries, but who argue that such a category can only claim universal validity if defined in terms of formal rather than notional criteria, and if one is concerned with category membership rather than with cross-linguistic syntactic equivalence. These are authors working in the Government and Binding framework established by Chomsky (1981), and the relevant category is referred to as an “inflectional” element abbreviated INFL (suggesting “inflection”) rather than as auxiliary or AUX. INFL, which indicates in particular whether the clause is finite or infinitival, is a collection or complex of features; it may be viewed as a more comprehensive kind of category than auxiliary or AUX: What links it with the notion

of auxiliary is the fact that it comprises tense and the modals; it differs, however, conceptually from that notion in that in addition it has the features person, gender and number. The last three features form a complex that is nominal in character and is referred to by Chomsky as AGR (for “agreement”; Chomsky 1981; 1985:160–62).

Finally, mention should be made of yet another issue that has largely gone unnoticed in the literature. As we observed, one widespread characteristic of auxiliaries is that they also have main verb uses. Thus, the item *has* is said to have an auxiliary use in (6) but a main verb use in (7).

6. Peter has left.
7. Peter has measles.

Various proposals to reconcile the simultaneous co-existence of verbal and nonverbal properties in English items such as *have* are found in the literature on this subject, most of them boiling down to issues of descriptive and/or terminological convenience. Falk (1984:498–504), for example, introduces the term *helping verb* for “Verb-like items that appear in Modal position when tensed.” For adherents of the main-verb hypothesis this does not pose a problem: in both (6) and (7) *has* is analyzed as a full/main verb. Those defending the autonomy hypothesis, on the other hand, usually argue that *has* is an auxiliary in (6) but a main verb in (7). There is, however, a third position in addition according to which *has* is an auxiliary in both cases. While this position is not frequently encountered, it has nevertheless been maintained (e.g., Schachter 1983:190; cf. Hudson 1976:151) and adds to the large array of views that have been expressed on auxiliaries.

Furthermore, most authors would agree that the syntax of auxiliaries is associated in some way or other with that of the verbal group or verb phrase. Yet there are also suggestions to the effect that auxiliaries should be treated as part of the nominal syntax. Thus, if one were to follow Schmerling (1983), one would analyze English auxiliaries as modifiers of nominative subjects rather than relating them to the verb phrase. The alternatives sketched here present but a selection of the many solutions that have been proposed to assign auxiliaries their right place in grammar. One could in fact say that virtually every conceivable proposal has been put forward by linguists to describe the structure of auxiliaries, however odd such proposals might appear.

1.2.6 “Quasi-auxiliaries”

The problems surrounding an understanding of the notion “auxiliary” is further aggravated by the fact that a number of additional taxonomic distinctions have been proposed to define kinds of auxiliary. Langacker (1978:858), for example, distinguishes in English between grammaticized and ungrammaticized auxiliary elements, and Winford (1990) and Christie (1991) argue that such entities should be divided on morphosyntactic

grounds into what they call, respectively, “primary” and “secondary” auxiliaries, the former consisting of monolexemic items such as *have*, *will*, and *be*, while the latter include polylexemic items like *be able to* or *be going to* (cf. Mufwene 1991:14).

Perhaps a more substantial dichotomy relates to the distinction between “auxiliaries proper” and what one might wish to call “quasi-auxiliaries” (cf. Brinton 1988:72). Bolinger comments on this term thus: “It is equally an error to try to create a category of ‘semi-auxiliaries,’ implying that such a category would be amenable to its own special rules. This is why I have chosen to speak of quasi-auxiliaries” (Bolinger 1980:297).

Quasi-auxiliaries may be characterized as verbs that in most respects behave like full verbs but, when governing nonfinite (participial, gerundival, infinitival, etc.) verbs, tend to assume a grammatical or “formulaic” function (cf. Twadell 1963). These include the catenatives of Palmer (1974), “verbs of temporal aspect” of Emonds (1976), “aspectualizers” of Freed (1979), or the “semi-auxiliaries” described by Green (1982) for the Romance languages, “often verbs of motion, which serve as passive auxiliaries in a more or less grammaticalized state while retaining most or all of their lexical properties in other contexts” (Green 1987:261), or English catenatives such as *get V-ing*, *keep (on) V-ing*, *want to V*, or *be about to V*, expressing notions like process, effort and achievement, attitude, need, causation, perception, futurity, etc. (Twaddell 1963:22–23; Palmer 1974:5–18; Brinton 1988:69–73). While Huddleston (1976b) classifies catenatives as full verbs, others have associated them more closely with auxiliaries. For Poutsma (1926:297, 307) they are “copulas of the second kind,” which, in a manner, may be regarded as auxiliaries of aspect. Brinton (1988:71) argues that Huddleston’s analysis may be correct on syntactic grounds, but that on semantic grounds one could reach the conclusion that certain catenatives function much like auxiliaries. However, with reference to the nature of English aspectualizers, that is, a group of catenatives, she notes:

According to the status of the following verbal, they might be grouped with auxiliaries. Because of their behaviour when passivized, they could be classified together with auxiliaries and certain main verbs. Their tense properties associate them with the accepted aspect auxiliaries. In a paradigm model of English verb inflection, they could be equated with auxiliaries and “quasi-auxiliaries.” Under negation, they behave much like modals and main verbs. Thus, all of these tests taken together do not lead to a unified understanding of the status of the aspectualizers, nor of the accepted auxiliaries either.

Brinton 1988:73

One might also add to the list of “quasi-auxiliaries” what Mathews (1978) refers to as “half-way verbs” or what Palmer (1983:208ff.) calls the “semi-modals” of English, like *be able to*, *have (got) to*, and *be going to*, which differ from their “fully modal” counterparts, *can*, *must*, and *will*,

respectively, for example, in that they may co-occur with the modals, while modals never co-occur with each other. Are they verbs, or auxiliaries, or do they constitute a category of their own, intermediate between verbs and auxiliaries (cf. García 1967; Palmer 1974:194–209), or is it indeed justified to refer to them as a distinct group in the first place?

1.3 Notional Domains

Many authors tend to employ the term *auxiliary* for elements marking such functions as tense, aspect, or modality that are not affixes or inflections. There is, however, considerable disagreement with regard to the exact range of notional domains that are associated with the use of auxiliaries. Steele (1980) and Steele et al. (1981:178), for example, point out that, in addition to tense, aspect, and modality, one routinely finds elements marking negation, assertability conditions, question and emphasis, subject agreement, object agreement, or evidentiality included in the category AUX, and in grammatical treatments of European languages, grammatical distinctions of voice are commonly associated with the use of auxiliaries (see Section 1.6).

While tense, aspect, and modality may be said to constitute the core domains of auxiliary expressions (cf. Steele 1978), quite a number of alternative views have been voiced on this subject. Akmajian et al. (1979:2; 51) or Steele et al. (1981:21), or Langacker (1991), for example, mention only the notional domains of tense and modality in their definition of the category AUX. Pullum and Wilson (1977:762–63), on the other hand, discuss modality and aspect but not tense in their treatment of English auxiliaries. Furthermore, while for some authors, modals are prototypical auxiliaries, others exclude them from a consideration of auxiliaries (cf. Conrad 1988; Bußmann 1990); for Long (1961:130, 138), for example, *have* and *be* are true auxiliaries while the modals are “full verbs.” Others again use specifications such as “auxiliaries and modals” (Edmondson & Plank 1976; Abraham 1990). Thus, among those authors who discuss auxiliaries in terms of only two of the three domains, virtually all logically possible combinations do occur, at least in definitional statements, as Table 1.1 illustrates.

Table 1.1. The Main Notional Domains Mentioned in Definitions of Auxiliaries

Domains			References (examples only)
Tense	Aspect	Modality	
+	+	+	Steele (1978); Ramat (1987)
+	+		Conrad (1988); Bußmann (1990)
+		+	Akmajian et al. (1979); Steele et al. (1981); Langacker (1991)
	+	+	Pullum & Wilson (1977); Crystal (1980)

This raises the following question: Are any of the three notional domains more strongly associated with the phenomenon than others and, if yes, on what grounds? And finally: what other domains, such as voice or negation, should be considered in addition (see Section 1.6)?

1.4 Criteria

Another question that has occupied a number of researchers relates to the amphibian behavior of auxiliaries. For example, how is the item *need* in the following examples to be interpreted?

1. a. There needs to be more light in this room.
- b. There need not be more light in this room.

Does *need* in (1a) and (1b) belong to the same category, or are we dealing with two separate lexical items: one a main verb with an infinitive marker and regular main verb behavior (1a) and the other an auxiliary with no infinitive marker and a defective distribution, occurring only in negative-polarity environments (Pullum & Wilson 1977:746)? If *need* in (1a) and (1b) belong to the same category, how is their different morphosyntactic behavior to be explained in a synchronic grammar of English? If they do not belong to the same category, how is their formal and semantic similarity to be accounted for? Akmajian et al. (1979:18) decide that *need* in (1a) is a verb because it shows a verbal inflection, whereas in (1b) it lacks a verbal inflection and, hence, it is not a verb. They argue that “it seems quite counterintuitive to claim that the verb *need* has a defective paradigm in some of its uses but not in others.” For Steele (1978:15), presence versus absence of the infinitive marker is criterial for deciding whether, for example, *need* is a verb or else belongs to the category AUX: According to her, lack of *to* indicates the absence of a clause boundary between the modal and the main verb; in addition, it indicates that the main verb is not subordinated to the modal. Similarly, Palmer (1979b) argues that the item *need* in *needn’t* and *doesn’t need*, respectively, belongs to two different word classes, simply because “they *are* different and an analysis that shows them to be different (as does one that distinguishes auxiliaries and main verbs) is more, not less, acceptable than one that does not” (1979b:7). Certainly, establishing two distinct categories and defining *need*₁ as a main verb and *need*₂ as an auxiliary might seem to be the easiest way out, but does this not raise more questions than it answers?

One of these questions relates to the kind of criteria used for defining linguistic categories. First, there is the morphologist position according to which the presence versus absence of certain inflections constitutes the primary criterion of classification. For some authors, such as Jackendoff (1972:100) or Akmajian et al. (1979:18), the morphological criterion of number agreement is sufficient to distinguish between verbs and nonverbs in English. Second, there are those who argue that syntax is a much more appropriate criterion. Gleason (1955:104) observes that “the definition of a verbal auxiliary must be based largely on syntax rather than on the

somewhat debatable inflection, and is therefore a syntactic rather than a paradigmatic class.” Palmer (1979b:8) does not consider morphology to be an important criterion either, drawing attention to the fact that the far more obvious auxiliaries *be* and *have* do exhibit number agreement. Instead he uses a syntactic criterion for assigning the item *need* to different classes (see previous discussion). Other authors again claim that a consistent definition of auxiliaries needs to be based on semantic criteria. Brinton (1988, Chap. 2), for example, rejects syntactic considerations and, instead, uses semantic and functional criteria in order to demonstrate that English aspectualizers such as *start*, *continue*, *stop*, etc. are auxiliaries. The question that all these discussions raise is: Are there any cross-linguistically relevant or language-independent parameters that would allow us to define the place of auxiliaries in grammar or, alternatively, to determine if, at all, auxiliary is a linguistically valid notion? I will return to this question in Chapter 2.

1.5 Dependency

A further issue concerns the syntactic and functional relationship between auxiliary and main verb, and in particular the notions of subordination and dependency, where three major positions have been maintained. According to one position, auxiliaries are subordinate to or dependent on main verbs. This position is expressed perhaps most clearly by Huddleston: “Auxiliary verbs are precisely those verbs which do function as dependent in VP structure, and are contrasted with main verbs, which function as head” (Huddleston 1984:128). Similarly, for Crystal (1980:38), their “subordinate status” is one of the two definitional criteria proposed for auxiliaries, the second criterion being that they “help to make distinctions in MOOD, ASPECT, VOICE, etc.” (loc. cit.), and Palmer argues that main verbs are heads of the verb phrase and auxiliaries modifiers because selectional restrictions “hold very largely between the head nouns and the head main verbs while the choice of adjectives and auxiliaries is largely irrelevant” (1979b:23). Note also that for Matthews (1981:63–64) the function of the auxiliary *has* in the phrase *has appeared* “presupposes” that of *appeared* since the auxiliary has no role except in relation to the element to which it is auxiliary. He therefore classifies auxiliaries together with items like *the* (as in *the meat*) as dependent elements or determiners (Matthews 1981:155).

Although not described in terms of a dependency model, a related view is expressed by Langacker (1991, Chapter 5) with reference to his distinction between content structure and grounded structure. The verbal group exclusive of tense and modality is referred to as both the content structure and the head of a finite clause. Note that auxiliaries are not treated by him as a unitary grammatical constituent; rather he divides them, for example, into tense and modality on the one hand and the remaining auxiliaries on the other, the latter combining with the main

verb (content verb) to form the clausal head. For Anderson (1973:82), on the other hand, auxiliaries in English are a “V that comes in the course of its derivation to immediately govern another V,” and in some more recent versions of the generative paradigm, a functional category INFL is proposed that contains such features as tense, modality, as well as a complex AGR (for “agreement”) having the features person, gender, and number. This category uniquely selects VP as its complement and VP can only be the complement of INFL; that is, there is a biuniqueness relation between the two categories (see Chomsky 1981; 1985; Felix 1990).

The second position is that maintained or implied, for example, by Chomsky (1957, 1965) and many of his followers (e.g., Akmajian et al. 1979), for whom the syntactic categories AUX and Verb or VP, respectively, are on the same syntactic level forming a coordinate structure of concatenated constituents. For Steele (1978:15), one of the criterial properties for members of the category AUX is that they do not subordinate main verbs. She argues that the lack of the English infinitive marker *to* after a modal not only indicates the absence of a clause boundary but also that the main verb is not subordinated to the modal. Note that most proponents of this position argue in terms of a model based on phrase structure rather than on dependency grammar. There is, however, one notable exception: Although using a dependency structure model, Hudson (1976:149ff.) comes to the conclusion that auxiliaries are on the same syntactic level as main verbs, the two are described by him as being “sisters,” whereas in Chomsky’s (1957) paradigm they are said to be “cousins.” Dependency in Hudson’s framework concerns the relation between “sisters”: In a sequence of verbs, each one depends on the one before it. Thus, in the English sentence (2) there are said to be four “sisters,” the first three of which are auxiliaries (*may*, *have*, and *been*) while the last (*swimming*) is not. Apart from *may*, each “sister” verb is dependent on the one preceding it.

2. John may have been swimming.

Concerning more details on Hudson’s (1976) analysis, see Section 1.2.5, but see also Hudson (1987) for a modified position (Section 3.2).

According to the third position, on the other hand, main verbs and auxiliaries are in a dependent–head, function–argument, operator–operand, or controlled–controller relation; that is, the two are hierarchically ordered in that auxiliaries are *heads* of the main verb (Anderson 1973:82; Edmondson & Plank 1976; Schachter 1983; Hudson 1987); in fact, their head status is considered by some authors to be one of the definitional properties of auxiliaries.

The controversy sketched here appears to have been triggered by a variety of factors. One of them relates to an insufficient differentiation between morphosyntactic³ and semantic considerations. Mufwene, for example, comes to the following conclusion: “Typically, when a verb is recognized as auxiliary, it heads a verb syntactically but is interpreted

semantically not as a head but as a modifier” (Mufwene 1991:3). Another, perhaps more significant, factor relates to the kind of model adopted. What is obvious from this discussion is that most scholars concerned had views that in some way or other are at variance with what Tesnière (1959) and his followers had in mind when proposing dependency as a key notion of syntactic analysis. It would seem indeed that scholars using a rigid version of the dependency model were likely to arrive at an interpretation according to which auxiliaries are heads and main verbs dependents, while those using alternative models, especially those relying on a phrase structure model, were more likely to propose alternative solutions.

Furthermore, one might wish to add the question as to whether the dependency structure of auxiliaries should be defined with reference to language-specific or to universally defined parameters. A number of controversies on the status of auxiliaries implicitly or explicitly relate to this issue. Huddleston, for example, objects to Palmer’s (1974) treatment of auxiliaries, for example, on the grounds that the latter’s classification is based on differences that “are very much idiosyncratic to English” (Huddleston 1976a:213), and that “we do not find equivalent irregularities associated with what are traditionally regarded as auxiliary verbs in other languages” (Palmer 1979a:334). One might in fact imagine that auxiliaries can be described as heads in some languages but as dependents in others, although, to my knowledge, such a position has not been seriously considered by students of the subject. I will return to this issue in Section 3.2.

1.6 Definitions

As the preceding discussion suggests, the way auxiliaries are conceived of and defined is to no minor extent influenced by the theoretical background or model adopted by the author concerned. In order to have a wider spectrum of views about what an auxiliary (verb) is or should look like, fifteen dictionaries of linguistic terminology were consulted, six published in English, seven in German, and two in French. The result is that there are in fact a number of properties shared by many of the definitions provided in these dictionaries, such as the following:

- Eleven out of fifteen definitions are illustrated with examples of auxiliaries, and in all eleven instances the examples include the items “be” and “have,” other items being much less frequently named: “do” (5 times), “become” (4), “shall” (3), “will,” “may,” and “can” (each 2 times). As expected, the item “do” is confined to English, and “become” (*werden*) to German dictionaries.
- The most frequently named notional domains associated with auxiliaries are tense (8 times), aspect (6), modality (5), and voice (5).
- In three dictionaries, auxiliaries are referred to as verbs, and in another four as a subset of verbs.
- Auxiliaries are said to have no lexical meaning according to four,

and a “weakened” or “incomplete” meaning according to another three definitions.

- Furthermore, four dictionaries mention that auxiliaries can also be used as main verbs.

On the whole, however, the definitions provided reflect roughly the same wide spectrum of views encountered in the preceding paragraphs; in fact some of these definitions do not have a single property in common. One problem relates to the question as to whether there are certain linguistic items that can be said to constitute prototypical instances of auxiliaries. According to the definitions examined here, items expressing “be” and/or “have” would be most closely associated with the notion of auxiliaryhood. Langacker (1991), on the other hand, suggests that *have* is a noncentral or even peripheral member of the category of English auxiliary verbs, while *do* is the best exemplar of this category since it profiles a fully schematic process and has no additional conceptual content (1991:239). Similarly, Quirk, Greenbaum, and Svartvik (1972:77) consider *do* to be “the most neutral or ‘auxiliary-like’ of all the auxiliaries” in English.

Another issue that appears to figure prominently in discussions on auxiliaries is whether these items should be defined primarily in terms of semantic, syntactic, or morphological criteria; this problem has been discussed in Section 1.4. If we were to follow Chomsky and his followers, for example, syntax would provide the primary definitional parameter. For Langacker, on the other hand, (English) auxiliaries typically represent “nonobjective content” (1974:631); they are verbs “whose conceptual content in the objective axis is limited to a fully schematic process” (1991, Chap. 5, p. 23).

Similar problems are experienced when trying to define a category AUX. The definition proposed by Akmajian et al. (1979:2) has two components, namely, first, that AUX is a category distinct in its syntactic behavior from the behavior of other syntactic categories, and, second, that it labels a constituent that includes elements expressing the notional categories of tense and/or modality. Pullum (1981:437), however, observes that in French there is a category distinct from all others in its behavior that includes items expressing tense, as in *donne* “give,” *donna* “gave,” *donnait* “was giving,” and *donnera* “will give,” and modality, as exemplified by such items as *peut* “can,” *doit* “ought to,” and *faut* “must.” Pullum concludes that, with reference to the definition proposed by Akmajian et al. (1979), this would mean that French will not have a category V (“verb”) at all, since all items traditionally classified as verbs may be said to fall under the definition of their category AUX. In other words, if we were to follow Akmajian et al. (1979), the label AUX would be assigned to exactly those elements that are canonical instances of verbs in many languages; a number of additional objections relating to the definitions of AUX proposed by Steele (1978) and Akmajian et al. (1979) are presented in Pullum (1981:436ff.). Some of Pullum’s objections have been taken care of in

subsequent attempts at searching for an appropriate definition; in the treatment by Steele et al. (1981), for example, AUX is defined as containing a specified set of elements marking tense and/or modality, that is, as being associated with a closed class of linguistic items. The problem of what should qualify as a definitional as opposed to a nondefinitional property of AUX, however, has essentially remained unsolved (cf. Kaisse 1984).

In the present study, the term *auxiliary* is employed to refer to a linguistic item that combines a number of the characteristics that have commonly been associated with auxiliariness, that is, those listed in the following section (1.7); the larger the number of characteristics, the more likely a given item is to constitute a “good example” of an auxiliary. A “good auxiliary” is verblike to some extent and is used either to place the situation described in the sentence with reference to deictic time (tense), to ascribe a temporal contour to it (aspect), or to assess its reality (modality) (cf. Steele 1978:11). In accordance with the theoretical position adopted here, no definition of auxiliaries in terms of necessary and sufficient conditions is offered; nevertheless, an attempt at defining auxiliaries within the present framework is made in Section 2.6.

1.7 Some Properties of Auxiliaries

The definitions discussed in Section 1.6, like most other definitions with which we are familiar, are derived primarily from observations on European languages. None of them, irrespective of whether they relate to the notion “auxiliary” or the category “AUX,” can claim any meaningful cross-linguistic validity beyond the few languages on which it rests. On the basis of a larger language sample, it would seem that the following attributes are mentioned particularly often in connection with the description of auxiliaries. Note that some of the statements to be listed here may be viewed as alternative ways of saying the same thing, the difference in phrasing being due to differences in the framework or perspective adopted. No attempt is made to distinguish between definitional, criterial, and nondefinitional properties (see previous discussion).

- a. Auxiliaries tend to provide expressions for a small range of notional domains, especially for the domains of tense, aspect, and modality. This, however, does not exhaust the range of possible domains; other domains exhibiting “auxiliarylike” properties in a number of languages are negation and voice.
- b. They form a closed set of linguistic units.
- c. They are neither clearly lexical nor clearly grammatical units.
- d. They also occur as main verbs (Lewandowski 1973:259; Conrad 1988:92); for some authors, this “twin rôle” (Abraham 1990:201) in fact constitutes one of the definitional properties of auxiliaries.

- e. They express grammatical functions but exhibit, at least to some extent, a verbal morphosyntax. In a number of works they are defined as a subset of verbs (Crystal 1980:38; Bußmann 1990:186; Conrad 1988:92–93).
- f. While having some verbal properties, they also show a reduced verbal behavior, having, for example, “highly defective paradigms” (McCawley 1975:597). Typically, they may associate only with a restricted spectrum of tense/aspect distinctions and/or verbal inflections, may not be passivized, and do not have imperative forms, and some authors have pointed out that auxiliaries may not be independently negated (e.g., Park 1992:17).
- g. They may not be the (semantic) “main predicate” of the clause (Marchese 1986:82).
- h. They may have two “free variants,” where one is the full form (e.g., *I will go*) and the other one a reduced form (*I’ll go*), or one is a clitic and the other an affix (cf. Hartmann & Stork 1972:24).
- i. They tend to be unstressed or unable to receive contrastive stress (Akma-jian et al. 1979:53).
- j. They tend to be cliticizable or necessarily clitic (Steele 1978:35).
- k. They carry all morphological information relating to a predicate, such as marking distinctions of person, number, tense/aspect/modality, negation, etc. Steele et al. (1981:146) note that elements that are marked on AUX may be expressions of subject marking, subject agreement, aspect, question marking, emphasis, evidential, object marking, object agreement, negation, tense, and modality, but this list does not exhaust the range of functions expressed by elements typically attached as inflections to auxiliaries.
- l. Subject agreement also tends to be marked on the auxiliary rather than the main verb (Steele 1978:32).
- m. While auxiliaries are an obligatory part of finite clauses in certain languages, this is not necessarily so in nonfinite or imperative clauses (cf. Jelinek 1983).
- n. Auxiliaries may not themselves be governed by other auxiliaries, or only by a limited number of auxiliaries.
- o. They do not have a meaning of their own (Hartmann & Stork 1972:24; Lewandowski 1973:259; Conrad 1988:92–93), or do not contribute to the meaning of the sentence but rather are “synsemantic” and “syn-categorematic” to the lexeme to which they apply (typically the main verb); that is, they preserve the categorial status of the latter (Carlson 1983; Ramat 1987:13). Various ways of referring to this fact have been proposed. Tucker and Mpaayei (1955:96), for example, state in their Maasai grammar that auxiliaries are “verbs whose function is to indicate the situation in which the main verb operates.”
- p. They tend to occur separately from the main verb (Steele 1978:13, 21).
- q. They may be bound to some adjacent element (Steele et al. 1981:142–43).
- r. Unlike verbs, they may not be nominalized or occur in compounds (Marchese 1986:81).

- s. They tend to occur in a fixed order and in a fixed position in the clause (cf. Pullum & Wilson 1977:747; Marchese 1986:81). According to a typological survey carried out by Steele (1978), there are only three positions they occupy in the clause: first, second, or final, but the second position appears to be the preferred one, being used by a clear majority of the languages in her 20-languages sample.
- t. Furthermore, the following observation by Greenberg (1963:67; Universal 16) appears to be relevant to an understanding of auxiliaries: "In languages with dominant order VSO, an inflected auxiliary always precedes the main verb. In languages with dominant order SOV, an inflected auxiliary always follows the main verb." An additional generalization has been proposed by Steele (1978:42), namely that no language with an SVO or VSO basic word order, or with free word order, has its auxiliaries in clause-final position.⁴
- u. In the presence of an auxiliary, the main verb is likely to be used in a nonfinite form, frequently carrying with it some morphological element such as a nominalization, infinitive, participial or gerundival marker.
- v. Finally, in the presence of auxiliaries, the main verb may be associated with some locative morphology (Anderson 1973).

Note that some of the properties listed are obviously contradictory. According to property (f), for example, auxiliaries exhibit a reduced verbal behavior, associating only with a restricted spectrum of verbal morphology; according to property (k), on the other hand, auxiliaries are said to carry all morphological information relating to the predicate. As we will see in Chapter 2, such seeming contradictions are in no way exceptional; rather they are to be expected or even predicted once one is concerned with the overall behavior of this kind of linguistic unit. The problem of finding a clear, universally agreed definition of auxiliaries is also indicated by the frequent use of restrictive phrases such as "tend to," "may," or "are likely to." Which of these criteria apply in a given case depends not only on the language and the particular auxiliary looked at but also on the kind of perspective a given author decides to adopt. Many of the criteria also apply to main verbs or to certain kinds of main verbs, especially to those taking nonfinite verbs as complements. Nevertheless, taken together, the catalog of attributes may give some indication as to what a "good" auxiliary should look like. In fact, it would seem that the way they are discussed in many typological works suggests that, more than most other kinds of words or word classes, auxiliaries lend themselves to a prototype analysis; thus, the more of the attributes a given item exhibits, the more likely is it to correspond to the notion of a "prototypical auxiliary." The problems that are associated with analyzing auxiliaries in terms of classical categories based on necessary and sufficient criteria will be looked at in Section 3.4.

1.8 How to Explain Auxiliaries?

On the basis of the controversies summarized and the attributes listed in Section 1.7, a number of questions arise, such as the following:

- a. Why do markers of tense and aspect not seldom involve discontinuous expressions, including elements that are also used for nominalization and/or locative complements?
- b. Why do markers of person, number, negation, or tense in many languages not occur as inflections on main verbs but rather on auxiliaries?
- c. Why do auxiliaries exhibit certain kinds of constraints in word order placement, like those described by Greenberg (1963:67) and Steele (1978)?
- d. Why do auxiliaries as markers of grammatical functions such as tense, aspect, etc., need to have verbal properties in the first place?
- e. Why do they "lack a meaning of their own," as has been claimed by many authors; that is, why do they have no lexical/semantic content?
- f. Why do auxiliaries frequently have phonologically reduced forms?
- g. Why do main verbs frequently occur in a nonfinite form in the presence of auxiliaries?
- h. What accounts for the "amphibian nature" of auxiliaries, that is, for the fact that they are neither clearly lexical nor clearly grammatical units, and that many of them are used simultaneously as main verbs and as grammatical markers?
- i. Similarly, should auxiliaries be treated as part of the morphology or the syntax of a given language?

Very few scholars have dealt with these questions in detail, or with why auxiliaries exist in the first place, and those that have, have come up with answers that are not satisfactory in every respect. Steele's (1978:43) account is illustrative of this state of affairs. Having presented a worldwide survey of auxiliary structures in 20 languages, she concludes that AUX exists because languages have a tendency to cluster all the grammatical information about the sentence; in other words, elements like negatives, question particles, and AUX tend to be placed in the same slot. The same argument is presented by Steele et al. (1981:273–74) as an explanatory account for introducing a category AUX in German. The question that one might wish to raise is: Why do languages have a tendency to cluster together certain syntactic and semantic properties? As long as it remains unclear what motivates this tendency, such statements raise more questions than they answer; concerning a meaningful way of accounting for this clustering, see Givón (1984).

The same applies to an alternative account by Steele et al. (1981) according to which "AUX is that part of the sentence which makes possible a judgment about its truth value"; that is, the presence of "AUX is a necessary (but not sufficient) condition for the sentence to be a speech act that expresses a truth value." This hypothesis would seem to imply either that sentences without AUX are not speech acts expressing a truth value, or alternatively, if the presence of AUX is a *sine qua non* for a sentence to be a sentence, then all sentences are of necessity speech acts that express a truth value. It would seem that such accounts are more suggestive of circular reasoning than of an explanation for the presence of the category concerned.

While discussions on the taxonomic status of auxiliaries have aroused considerable interest, as we saw in the preceding sections, the question as to how to explain their peculiar nature has virtually been ignored by students of linguistic theory. I am not aware of any approach that would provide, or attempt to provide, a convincing answer. Perhaps the most promising step in this direction has been made by Anderson (1973) in his essay concerning aspect. According to the localist theory proposed by him, underlying grammatical functions are in general organized basically in terms of oppositions involving location and direction (1973:10), and grammatical functions of tense and aspect are no exception to this principle. Thus, he argues, the categories of tense and aspect are underlyingly locative and have to be described accordingly in synchronic grammar. By arguing that spatial expressions are linguistically more basic than various kinds of nonspatial expressions and therefore serve as structural templates for other expressions (Lyons 1977:718), localists have in fact identified one important explanatory parameter. We will return to this issue in Section 2.7.3.

1.9 Conclusion

By now the reader may have become lost in a proliferation of detail. In fact, in the recent history of linguistics, auxiliaries have provided one of the most popular battlegrounds for disputes on linguistic theory. A substantial body of data and many insights into the structure of language became available in the course of this research. Nevertheless, perhaps the main impression gained in the previous sections was that among the various opinions, claims, and theories that were put forward, each one was as good as the other. In spite of all the progress that doubtless has been made, the question as to what auxiliaries actually are and why they behave the way they do is still as far removed from being answered satisfactorily as it was 30 years ago. This question will be the main concern of Chapter 2.

2

Grammaticalization

The moment a verb is given an infinitive complement, that verb starts down the road of auxiliarity.

Bolinger 1980:297

After having reviewed the discussion concerning the categorical status of auxiliaries, Palmer (1979b:3) concludes that the argument is not one for which a clear-cut “Yes” or “No” answer can be given, but rather that judgments of appropriateness must be made. While this is in fact the position one is likely to arrive at when aiming at a taxonomic description of auxiliaries, a different perspective emerges once one analyzes auxiliaries in terms of the dynamics that give rise to them, especially when one interprets them as products of grammaticalization, as is done here.

The present chapter constitutes the main part of this study; it proposes a framework for dealing with auxiliaries and illustrates the application of this framework. The cognitive process that can be held responsible for the development of auxiliaries is outlined in Section 2.1, and some salient linguistic implications of this process are described in the subsequent Sections 2.2 through 2.6. Finally, in Section 2.7, an attempt is made to place the framework presented in this chapter in a wider perspective by pointing out its relevance and limitations, and by relating it to alternative approaches on this subject.

2.1 Basic Event Schemas

One major strategy to deal with our environment is to conceive and express experiences that are less easily accessible or more difficult to understand or describe, in terms of more immediately accessible, clearly delineated experiences (Lakoff & Johnson 1980; Stolz 1991b). This strategy entails in particular that complex contents are expressed by means of less

complex and more basic contents, and abstract concepts by means of more concrete concepts. Grammatical concepts are fairly abstract: They do not refer to physical objects or kinetic processes; they are defined primarily with reference to their relative function in discourse. Research on the genesis of grammatical expressions suggests that such expressions do not emerge *ex nihilo*; rather they are almost invariably derived from the domain of concrete concepts; grammatical morphology tends to develop out of lexical structures, especially out of such categories as nouns and verbs (see Traugott & Heine 1991; Heine, Claudi, & Hünemeyer 1991 for references).

Assuming that auxiliaries express grammatical concepts typically relating to the temporal state (tense), the temporal contours (aspect), and the type of reality (modality) of propositional contents (cf. Steele 1978:13), almost invariably, linguistic expressions for these concepts are derived from concrete entities describing such general notions as

- a. Location (i.e., where one is),
- b. Motion (where one moves to, from, through, etc.),
- c. Activity (what one does),
- d. Desire (what one wants),
- e. Posture (the way one's body is situated),
- f. Relation (what one is like, is associated with, or belongs to), or
- g. Possession (what one owns).

These notions tend to be expressed linguistically by means of verbs such as the following:

- a. Location: "be at," "stay at," "live at," "remain (at)," etc.
- b. Motion: "go," "come," "move," "pass," etc.
- c. Activity: "do," "take," "continuc," "begin," "finish," "seize," "put," "keep," etc.
- d. Desire: "want," "wish," etc.
- e. Posture: "sit," "stand," "lie."
- f. Relation: "be (like)," "be (part of)," "be accompanied by," "be with," etc.
- g. Possession: "get," "own," "have," etc.

As we will see in the following section, these verbs are themselves part of more complex concepts called *event schemas*, and the behavior of auxiliaries can only be accounted for with reference to these schemas.

Several attempts have been made to describe the nature of the verbs recruited as source concepts for auxiliiation, and they have led to similar conclusions. Bybee, Perkins, and Pagliuca (1992:5) observe that English movement verbs such as *walk*, *stroll*, *saunter*, *swim*, *roll*, and *slide*, each contains considerable detail about the nature of the movement, and thus are appropriate only with certain types of subjects. The movement verbs *go* and *come*, however, lack specifics concerning the nature of the movement and thus are appropriate in a much wider range of contexts, and they are in fact the most frequent of the movement verbs in English. It is verbs of this

degree of generality that appear in constructions entering grammaticalization. Kuteva (1991) argues that verbs entering into grammaticalization are direct encodings of a limited number of kinesthetic image schemas, such as SOURCE–PATH–GOAL, CONTACT, PART–WHOLE, etc. These schemas are said to belong to the following four conceptual domains: the physical domain (e.g., “be at/on,” “go/come,” “have”), the temporal domain (e.g., “do,” “begin/become,” “finish,” “remain”), the intra-subjective domain (e.g., “want”), and the inter-subjective domain (e.g., “must,” “permit”). On the basis of a sample of eleven Indo-European, Finno-Ugric and Sino-Tibetan languages, she observes that among the 117 auxiliary constructions figuring in her collection there were only 20 lexical verb sources, namely “be on/at,” “be” + adjectival participle, “have,” “come (to),” “go (to),” “walk,” “sit,” “stand,” “lie,” “begin,” “become,” “remain,” “finish,” “do,” “want,” “must,” “permit,” “take,” “put,” and “give.” She observes that most of these verbs do not coincide with what in prototype theory is referred to as *basic-level concepts*; rather they are characterized by a higher level of generality than basic-level concepts. For example, rather than a basic-level concept like “walk,” it is concepts such as “go” and “come,” interpreted by her as direct image-schematic encodings, that are recruited for auxiliiation; note, however, that “walk” also figures in her list of verbal sources mentioned.

According to Mkhathswa (1991:130ff.), the question as to which kinds of verb tend to be grammaticalized to auxiliaries can be answered with reference to the structure of the semantic domains concerned. For his target language Zulu he defines, for example, a spatial domain characterized by the features [motion] and [direction], which is made up of verbs such as -za “come,” -ya “go,” -ngena “come in,” -sondela “come near,” and -dilika “come down.” The first two of these verbs were grammaticalized to tense markers: -za gave rise to a marker of immediate future and -ya to a marker of remote future tense. Mkhathswa argues that it was these two, rather than any other verbs belonging to the same domain, that were recruited because -za and -ya constitute the *generic members* of the domain: Compared to the other members of the domain, -za and -ya (i) are semantically the least constrained, (ii) exhibit the widest scope of usage, and (iii) may in certain contexts substitute for other members of the domain while the opposite does not hold true. Similarly, within the domain of posture it is the verb -hlala “sit, stay” that constitutes the generic member, satisfying criteria (i) through (iii) and, hence, it was grammaticalized to a habitual auxiliary (-hlale “do always”), while other members of this domain, such as -qoshama “sit on haunches,” -qhiyama “sit leaning back,” or -dangalaza “sit with legs astride,” were not grammaticalized. It would seem that Mkhathswa’s analysis can profitably be extended to other languages, although the notion of “semantic domain” needs further refinement to be cross-linguistically applicable.

The selection of source concepts for auxiliiation might also be described with reference to what Givón (1992:7) calls cognitive markedness.

Marked structures are cognitively harder to process, that is, to memorize or to retrieve, and, conceivably, a verbal concept like “sit” is easier to process than concepts like “sit on haunches” or “sit with legs astride.” However, more evidence is required on this point.

2.1.1 Conceptual properties

Both in Kuteva’s and in Mkhathshwa’s studies, as in most works on grammaticalization, there appears to be an assumption to the effect that this process affects only single lexical items. This is in line with the by now classical definition volunteered by Kuryłowicz (1965:52), according to which grammaticalization “consists in the increase of the range of a morpheme advancing from a lexical to a grammatical or from a less grammatical to a more grammatical status.” In such studies, the important fact tends to be ignored that many instances of the process involve at the same time more than one linguistic item. In fact, quite a number of conceptual processes leading to the development of grammatical categories do not concern linguistic units such as words or morphemes but rather more complex conceptual entities. For example, in the grammaticalization of perfect aspects in a number of European languages, at least two markers were involved: an auxiliary “have” or “be” and a marker of nonfiniteness, which typically was a passive participle morpheme, and progressive aspect constructions in many languages world-wide even involve three distinct morphological elements: an auxiliary verb, a nominalization marker, and a locative element. Such a complex construction can also be observed, for example, in the English Future marker *be going to*.

Perhaps the most familiar example is that of the Latin verb *habere*, “have,” which in the Romance languages has given rise to Perfect markers on the one hand and to Future markers on the other. What accounts for this divergent development is the fact that it was not the verb *habere* that was grammaticalized; rather grammaticalization involved entire periphrastic constructions: The construction *habere* + Perfect Passive Participle gave rise to Perfect expressions, while *habere* + infinitive periphrasis was responsible for the development of Future constructions in French and Spanish (see the following).

That such complex forms of linguistic marking are not anomalous in any way becomes clear when one looks at the cognitive structures underlying grammaticalization. In Heine, Claudi, and Hünemeyer (1991, Chap. 2) a distinction is made between source concepts and source propositions. While the former refer to concrete objects, processes, or locations, that is, to simple concepts, the latter may be viewed as *event schemas* or syntactic frames,⁵ or abstract *instrumental scripts* (Schank & Abelson 1977; Sanford 1985:200); they relate to stereotyped contents describing situations that appear to be basic to human experience and communication and are encoded linguistically by means of predications typically involving one predicate and two participants.

The term *event schema* roughly corresponds to the notion of proposition as used by Langacker (1978:857), who defines it as “a simple semantic unit consisting of a predicate and associated variables, e.g., *x SEE y*.” What distinguishes event schemas from simple concepts in particular is that the former are composed of more than one perceptually discontinuous entity. For example, an event schema like “X EAT Y” typically contains three entities, which are X, EAT, and Y. Simple concepts, on the other hand, consist of no more than one entity, even though they may imply the presence of other entities in addition. An inherently relational concept like EAT, for example, typically implies the presence of an agent (X) and a patient (Y). Event schemas may be distinguished linguistically from simple relational concepts like EAT in that each of them is associated with different kinds of questions. The question “What happened?,” for example, implies an answer in terms of a propositional statement while a question like “What did he do to it?” would be suggestive of an answer in terms of a simple concept like EAT.

The main event schemas that are immediately relevant for understanding the behavior of auxiliary constructions are listed in Table 2.1. It goes without saying that these are not the only event schemas that are basic to human experience and communication; one might think, for example, of one-argument structures such as “X died” or three-argument structures like “X gives Y to Z.” What distinguishes the following event schemas from others is that on the basis of cross-linguistic generalizations they have been found to be the main ones responsible for expressions of tense and aspect. The question of whether these event schemas can be defined as universally relevant cognitive structures would seem to require further research (see Heine *forthc.* for details); concerning a discussion of some of these event schemas in a different framework, see Binnick (1976).

Note that these schemas are not all equally basic. Historical evidence suggests, for example, that some of them may be derived from others, for

Table 2.1. The Main Event Schemas as Sources for Grammatical Categories of Tense and Aspect

<i>Conceptual form</i>	<i>Proposed label</i>
a. “X is at Y”	Location
b. “X moves to/from Y”	Motion
c. “X does Y”	Action
d. “X wants Y”	Volition
e. “X becomes Y”	Change-of-state
f. “X is (like) a Y”	Equation
g. “X is with Y”	Accompaniment
h. “X has Y”	Possession
i. “X stays in a Y manner”	Manner

example, (d) from (c), (e) from either (b) or (c), (f), (g), (h), and (i) from (a), and (h) may also have (c) or (g) as its historical source. This might indicate that (a), (b), and (c), that is, the Location, the Motion, and the Action Schemas, are more basic and constitute more salient event schemas of human conceptualization than others, but more research is required on this issue. For the present purpose it may suffice to observe that at the stage where auxiliary meanings evolve, any of the nine event schemas can be drawn upon—regardless of its respective degree of basicness.

An understanding of event schematic contents is crucial for reconstructing the process underlying auxiliation. One common effect to be observed in the grammaticalization of these schemas is that they typically lead to the emergence of complex marking structures, as we will see in the next section.

2.1.2 Linguistic properties

There is considerable variation in the shape that any of these event schemas may take in a given language. In the Location Schema, for example, instead of a copula verb “be,” postural verbs such as “sit,” “stand” or “lie,” or durative verbs such as “live” or “stay” are found in some languages, and the label “at” stands for a variety of locative notions, such as “in,” “on,” “under,” etc.

The Location Schema has been referred to by Dik (1987:64ff.) as the Localist channel. It is most commonly used to develop progressive aspects; in fact it probably accounts for more progressive constructions in the languages of the world than all other event schemas taken together (see, e.g., Anderson 1973; Traugott 1978; Marchese 1986:67; Hcine *forthc.*). The following is a typical example, taken from one of the structures used in Dutch to encode the notion of a progressive:

1. Dutch

Hij is een boek aan het lezen.
 he is a book at the reading
 “He is reading a book.”

While the morphosyntactic structure exhibited in (1) is perhaps the most common one used to encode the Location Schema, alternative constructions are found in some languages, as in (2), taken from Diola Fogy, where the complement appears both in its nominal and in a pronominalized form.

2. Diola Fogy (West-Atlantic, Niger-Congo; Sapir 1965:113)

burək n-en di bə
 work I-am in it
 “I’m working”

The Location Schema typically involves the use of some locative morphology. This need not be the case, however, when the verb of motion is

transitive and, hence, takes the nominalized main verb as an objectlike argument. This applies, for example, to the Godié verb *kò*, “be at,” which has the nominalized verb as its complement without any locative marking, both in locative (3a) and in progressive constructions (3b):

3. Godié (Kru, Niger-Congo; Marchese 1986:63)

- | | |
|--|--|
| a. ɔ̌ kò sùkú
he be.at school
“He is at school.” | b. ǯ kò 6lɪ-dɪ
he be.at sing-place
“He is singing.” |
|--|--|

The Location Schema may also be said to be present in cases where locative constructions involving nonlocative nouns are concerned, such as the French Progressive form *être en train de* “be in the process of” (cf. Bybee & Dahl 1989:78). The Location Schema has been described by Anderson in the following way:

In those languages for which I have been able to find some sufficiently explicit account of tense and aspect, there is also a consistent association of this kind, i.e., of progressive aspect (where it is given separate expression) and (if anything) predications involving (“be” plus) case particles (marking the verbal noun)—inflexions, prepositions, postpositions—that are also used (or have been used) to indicate “(spatial) location at or in” [. . .].

Anderson 1973:15

Anderson provides a massive data base to illustrate this event schema with examples from many languages worldwide. Note, however, that he applies a rather generous definition of the term *locative*, one that is not always substantiated by the facts presented but allows him to treat essentially all nine event schemas listed in Table 2.1 as “underlyingly locative.” His examples include, for example, the Swahili *na* construction, of which (4) is an example. This construction is derived from a verbal possessive structure involving the item *-na* “be with, have,” which is exemplified in (5). That this structure has no association whatsoever with location can be shown, for example, by forming a corresponding question, as in (6a), while (6b), which would imply that *-na* has or may have a locative complement, is ungrammatical.⁶

4. Swahili (Bantu, Niger-Congo)
ni- na- soma “I am reading”
1.SG-PROG-read
5. ni- na gari “I have a car”
1.SG-have car
6. a. u-na nini? “What do you have?”
2.SG- what?
- b. *u-na wapi? *“(Where do you have?”
2.SG- where?

Rather, it would seem that (4) is a straightforward example of the Accompaniment Schema (see the following).

Conceivably, the proposition “X is after Y,” which in a number of Celtic languages has given rise to Perfect (Scots Gaelic, Welsh) or Recent Perfect constructions (Irish), may be a sub-type or a derived form of the Location Schema, where instead of a spatial complement, a temporal one, involving the temporal adposition “after,” has been employed. The following two examples illustrate this schema, where apparently the notion of a perfect is conceptualized in terms of a present state following (from) a past situation (cf. Comrie 1976:106).

7. Welsh (Comrie 1976:106)

yr ydwyf i wedi ysgrifennu' r llythyr	“I have written the
“am I after writing the letter”	letter”

8. Irish (Comrie 1976:106)

táim tar éis teacht isteach	“I have just (this
“I-am after coming in”	moment) come in”

The Motion Schema involves most of all the verbs “go” and “come” as predicates (Givón 1973; Traugott 1975, 1978, Fleischman 1982a, 1982b, 1983),⁷ in addition such verbs as “move,” “walk,” “pass,” “arrive,” and “leave.” An example of the Motion Schema is provided by the English *be going to*-future or the French *venir de*-past, and this schema is most commonly associated with ingressive and future tense categories. Like the Location Schema, the Motion Schema typically involves the use of a locative morphology since the main verb is encoded as part of a locative adverbial phrase. However, what we observed in the case of the Location Schema also applies here: When the verb is transitive, then the complement is encoded like an object constituent without any locative marking. Examples are provided once more by the Kru languages, as in the following Koyo construction involving the item *yì* “come to” (see Claudi 1988):

9. Koyo (Kru, Niger-Congo; Marchese 1986:75)

A6í yì	du	A6í yì	du	mo
Abi come.FACT	town	Abi AUX	town	go
“Abi came home.”		“Abi will go to town.”		

Examples of the Action Schema are less commonly encountered, but may be found in various parts of the world. The following is taken from Usarufa, a language of New Guinea, and Bongo⁸:

10. Usarufa (Bee 1973:295)

úbó-ubo kéiyé
dig-dig he.is.doing
“he is digging”

11. Bongo (Central Sudanic, Nilo-Saharan; Tucker 1940:75)

má-dó-ndèrè
I-do-walking
“I am walking”

Perhaps one of the most common forms of this proposition is one involving the verb "finish"; that is, "X has.finished Y," which has given rise to perfect or terminative aspect categories in many languages (see Anderson 1973:35). Furthermore, the Action Schema is frequently employed to develop negation markers. The form this schema takes in this case is usually "X misses/stops/lacks/leaves Y," other verbs figuring in this schema being "refuse," "deny," "reject," "avoid," "fail," or "remove" (cf. Givón 1975; Marchese 1986:180ff.). (12) is an example of this kind of schema.

12. Bassa (Kru, Niger-Congo; Marchese 1986:191)
 ɓɔ kùà nyu-e
 stop work do-NOMIN
 "Don't work."

Prototypical verbs figuring in the Action Schema are action verbs such as "do," "take," etc. It is unclear at the present stage of research whether other kinds of predicate should also be subsumed under this event schema or else belong in alternative schemas yet to be identified, for example, a proposition involving mental process or utterance verbs such as "think," "say," etc. An example is provided in (13).⁹

13. Tonga (Bantu, Niger-Congo; Collins 1962:40)
 Joni u- yeeya ku- fwa
 John 3.SG-think INF-die
 "John is about to die (or: John will die)."

The Volition Schema is employed in most cases for the development of future tenses, the English *will*-future being a typical example.

The Change-of-State Schema is rarely made use of to develop tense or aspect markers. An instance of it can be seen in the German *werden* construction (14a), which has been grammaticalized to a future tense category (14b).

14. German
- | | | | |
|----------------------|--------|--------------------------|----------|
| a. Hans wird | Arzt. | b. Hans wird | kommen. |
| Hans become.3.SG | doctor | Hans FUT.3.SG | come-INF |
| "Hans is going to be | | "Hans is going to come." | |
| a doctor." | | | |

The Equation and Manner Schemas are especially common in European languages. Frequently, the auxiliary verb in such constructions has some locative base ("be at," "sit," "stand," "live," etc.; cf. Comrie 1976:102), and the main verb tends to be encoded like a nominal (e.g., a *nomen agentis*) in the case of the Equation Schema and like an adverbial complement (e.g., a gerundival form) in the case of the Manner Schema. In a number of cases, such as (15), it is difficult to decide which of these two schemas served as a source model.

15. Italian

sto mangiando
 stay.1.SG eat.PART
 "I am (just now) eating"

Anderson (1973:32–33) observes that when the Equation Schema is made use of, the constituent Y is encoded as an adjectival rather than as a nominal entity. This is suggested, for example, by the fact that in French Perfect constructions formed on the basis of this schema, the Perfect Participle following être "be" agrees with the subject of sentence (16a), as do adjectives [cf. (16b)].

16. French

a. Il est arrivé.	b. Il est petit.
"He has arrived."	"He is small."
Elle est arrivé-e.	Elle est petit-e.
"She has arrived."	"She is small."

Exactly the same holds true for the Manner Schema. Typically, in this schema the complement is treated like an adjectival or adverbial concept, as in the following example of a periphrastic perfect taken from Diyari, an Australian language, where the auxiliary is the verb "throw" and the complement (= main verb) has the form of an adverb.

17. Diyari (Pamanyunganic; Austin 1981:91, Thomas Müller-Bardey, p.c.)
 karaŋi ŋandu ŋukudu wayi-ŋa wara-yi
 today 3.SG.F.ERG kangaroo cook-ADVE throw-PRS
 "Today she has cooked a kangaroo." (Lit. "she threw in a cooking manner")

In a few languages, motion verbs such as "go" or "come" may also be employed as auxiliaries in the Manner Schema, for example,

18. Spanish (Bybee & Dahl 1989:79)

Anda buscando su reloj
 "He's (going around) looking for his watch"

The Accompaniment Schema can be observed frequently in the Niger-Congo family but rarely outside Africa. The following example is from Umbundu, a Bantu language spoken in Angola; concerning a similar example from Swahili, see (4) and (5).

19. Umbundu (Bantu, Niger-Congo; Valente 1964:281)

tu-li I' oku-lya
 we-be with INF-cat
 "We're eating"

Conceivably, the Accompaniment and the Possession Schemas can be merged into one major event schema, but in the absence of more conclusive evidence it seems advisable to keep them apart.

The Possession Schema corresponds to what Dik (1987:64ff.) refers to as the Property channel. It involves verbs such as “have,” “get,” “acquire,” or “own” as auxiliaries and is commonly employed in European languages, e.g., in the *have*-perfect forms of Romance and Germanic languages. In addition, it has given rise to future tense constructions as, for example, in the Western Romance languages French, Spanish, or Italian (Fleischman 1982a), or in a number of Kru languages. The following example is taken from Godié, an Eastern Kru language.

20. Godié (Kru, Niger-Congo; Marchese 1986:76)

a. ɔ kà monfi

he have money

“He has money.”

b. ɔ ká sa pi

he have/ down lie

AUX

“He is going to lie down.”

As we will see in the next section, however, the Possession Schema is part of a more complex structure when serving as a source for future tense constructions.

2.1.3 Complex schemas

The schemas looked at here may be dubbed “simple” schemas since they involve basic propositional contents characterized by a subject–predicate structure typically encoded linguistically as a simple clause. In addition, there are a few schemas that have a more complex structure in that, in addition to some basic topic–comment structure, they contain either an additional schema or an additional concept. The following complex schemas in particular deserve mention:

j. The Serial Schema,

k. The Evaluative Schema, and

l. The Purpose Schema.

The Serial Schema, which consists of a sequence of two, or even more, events, differs in its linguistic behavior from the other event schemas in a number of ways, especially in the fact that it gives rise to constructions where both the auxiliary and the main verb are finite; that is, they are inflected for person, tense, etc. Instances of the Serial Schema can be found in a number of languages of different continents and genetic stocks. More frequently, the auxiliary employed is a verb of motion (“go,” “come,” “leave”) or a postural verb (“sit,” “stand,” “lie”). Example (21), where a periphrastic construction of the form “X leaves, does Z” has been grammaticalized to a Present Progressive construction (> “X is doing Y”) in Kirma, illustrates this schema.

21. Kirma (Gur, Niger-Congo family; Prost 1964:56–59; Blansitt 1975:20)

mi wo

1.SG cat

“I cat/I’m eating”

mi ta mi wo

1.SG leave 1.SG eat

“I’m eating”

The Serial Schema appears to be employed primarily for the expression of aspectual categories. For example, it serves the expression of a Past Progressive in Zulu, as in (22), and of a Perfect aspect in the closely related Venda language, as in (23).

22. Zulu (Bantu, Niger-Congo; Anderson 1973:18)

ngi be ngi tanda

1.SG be 1.SG love

"I was loving"

23. Venda (Bantu, Niger-Congo; Doke 1954:172)

ndo- vha ndo- vhona

1.SG.PERF-be 1.SG.PERF-see

"I had seen"

A rather widespread use of the Serial Schema involves the development of perfect or completive aspect categories, where it takes the form "X does Y, it.is.finished." The linguistic consequence of this form is remarkable in two ways, first, in that there is no subject identity between the two verbs concerned since the subject of the "it.is.finished" phrase is typically an impersonal third person referent, and second, because it involves what may be called iconic coding: Irrespective of the basic word order or other word order constraints, the "it.is.finished" phrase follows the other phrase, as the examples to follow illustrate.

24. Yabem (Papua Melanesian; Bisang 1986:152; Thomas Müller-Bardey, p.c.)

bôc seng aêacma janggom gê- bacnê

pig 3.PL.eat our corn 3.SG-be.finished

"The pigs have eaten up our corn."

25. Ewe (Kwa, Niger-Congo)

me du i vɔ

1.SG eat 3.SG.0 be.finished

"I have eaten it up"

The verb *vɔ* "end, be finished" in (25) has been grammaticalized to a completive marker and, when used as such, no longer takes person or tense inflections; Westermann (1907:98) refers to it in this case as an adverb. Note that the type of structure exemplified by (24) and (25) would not qualify as instances of auxiliary constructions according to some authors, who consider subject reference identity between auxiliary and main verb to be one of the definitional properties of such constructions (e.g., Ramat 1987:16).

Most commonly, the Serial Schema simply has the structure of two juxtaposed verb forms. In a number of cases, however, there is some linking device connecting the two verb forms. Such a device may consist of a conjunction "and," as in the Danish example (26), or of an element marking consecutive actions or discourse continuity. Maa, for example, employs the verbal inflection *n-* for this purpose, which has been called a

“narrative tense” by Maa grammarians (Tucker & Mpaayei 1955), but which may perhaps more appropriately be described as a continuity marker (Christa König, p.c.). Thus, in (27), taken from the Chamus dialect of Maa, this marker connects the auxiliary -yyeu “want” with the main verb in a construction serving the expression of what has been called by Heine (1992) the ALMOST-aspect.

26. Danish (Koefoed 1958:188)

Jeg sad og skrev, da han kom ind
 I sat and wrote when he came in
 “I was writing when he entered”

27. Chamus (Maa, East Nilotic, Nilo-Saharan; Heine 1992)

k-é- yyéú ndaâ	k-é- yyéú lcáni	n- é- uróri
k-3.SG-want food.ABS	k-3.SG-want tree.NOM	NAR-3.SG-fall
“She wants food”	“The tree almost fell”	

Another form of the Serial Schema involves what appears to be some kind of formal subordination relationship between the two verb forms, in most cases expressed by some inflectional or other morphology on the main verb. Venda uses for this purpose the dependent marker *tshi* on the main verb, called “the Participial” by Venda grammarians (see Poulos 1990:324), as shown in (28), which exemplifies the grammaticalization of the verb *dzula* “sit, live, stay” to a Continuous aspect marker.

28. Venda (Bantu, Niger-Congo; Poulos 1990:325)

Vha dzula Tshakhuma	Vha dzula vha tshi vhalá
3.PL live Tshakhuma	3.PL CONT 3.PL DEP read
“They live in Tshakhuma.”	“They always or continuously read” (“they stay while reading”).

The Serial Schema deviates considerably in its structure from all other event schemas and does not usually figure in discussions on auxiliaries; nevertheless I wish to maintain that in spite of its idiosyncrasies, it constitutes one of the major schemas that have to be considered in order to understand the behavior of auxiliaries.

The preceding discussion has been confined largely to event schemas giving rise to distinctions of tense and aspect. Although it also affects modality in a number of ways (see Section 2.5), an analysis of modal categories is more complex and requires separate treatment since it would involve some alternative cognitive source structures in addition (see, e.g., Denning 1987). There are in particular two further schematic structures that can be observed cross-linguistically to give rise to categories of mood; they have been referred to here loosely as the Evaluative and the Purpose Schemas.

The Evaluative Schema is based on ethic or other judgements that are interpreted as introducing a modal notion, with the “main predication” being presented in the form of a complement, either as an infinitival or a

clausal complement of that notion. This schema is employed mostly for the agent-oriented (“deontic”) concepts of requirement, obligation, and permission, but its use may be extended to also express the corresponding epistemic concepts of certainty, probability, and possibility. Typically it has the form “It is X to/that Y,” where “X” is a verb of state, an adjective, or a nominal expressing the evaluative concept, for example, “good,” “useful,” “important”; that is, “X” is the item that is going to be grammaticalized to a modal category. Typical properties of the Evaluative Schema are:

a. The evaluative concept expressed by the matrix clause (“It is X”) consists of an impersonal expression having either no subject or a dummy subject consisting of a third person singular marker, as in the following English example (Palmer 1986:127):

29. It is essential that they should come.

b. Whereas English uses mostly adjectives as a predicate nucleus (e.g., *essential*, *necessary*, *likely*), verbs of state appear to be more frequently made use of in other languages, as in (30) and (31), but some languages also use nouns, as in (32).

30. Telugu (Dravidian; Thomas Müller-Bardey, p.c.)

neen ii sangati mii- too maaTLaaDa guuDa- du.

I DET matter 2.PL.OBL-COM talk.INF be.suitable-NEG.3.SG.M
“I shouldn’t talk to you about this matter.”

31. Turkana (Eastern Nilotic, Nilo-Saharan; Dimmendaal 1983:135)

ε- jə- ikína íyón̄ í- lósi-ó

3.SG-be.good-DAT you 2.SG-go- SUBJ

“You’d better go.”

32. Swahili (Bantu, Niger-Congo)

(Ni) heri u- end-e.

be luck 2.SG-go- SUBJ

“You’d better go.”

c. The complement may be nominal or clausal; in a number of languages both kinds of construction do co-exist. Nominal complements typically consist of infinitival verbs (plus their arguments), as in (30).

(d) Clausal complements tend to be encoded in the subjunctive mood, if such a category exists, as in (31) and (32). Acholi distinguishes between a long form and a short form of verbs. The short form largely corresponds in its functions to the subjunctive in other languages. Now, after *omyero*, a modal particle that expresses primarily the deontic notions of necessity and obligation and is derived from the third person singular Past form of the verb *myero* “be suitable, fit, becoming”; the main verb, which is historically the verb of the complement clause, is invariably used in the short form, as in (33), where *cam* “eat” is an example of a short form verb.

33. Acholi (Western Nilotic, Nilo-Saharan; Bavin 1992:2)

In omyero i- cam mot
 thou should 2.SG-eat slowly
 "You should eat slowly."

e. The syntactic status of the complement is frequently unclear; the complement may have the characteristics of an object or a subject constituent, or of both (cf. Palmer 1986:127–128, 154–156).

The Purpose Schema has the form "X acts (in order) to Y," where "acts" stands for the propositional predicate and the phrase "(in order) to Y" for an oblique constituent consisting of a purpose or a goal marker plus the notional main verb ("Y"). Like the complement of the Evaluative Schema, the purpose phrase may either be an infinitival or a clausal constituent and, accordingly, the purpose marker may be an adposition or case marker or else a clause subordinator, respectively. The Purpose Schema is used primarily to introduce agent-oriented modalities of requirement or obligation, as in (34), but since agent-oriented markers tend to be grammaticalized to epistemic markers, it may encode epistemic modality in addition. Not infrequently, it expresses tense or aspect functions as well, as in (35), where it has an ingressive meaning (cf. Denning 1987:46ff.).

34. Ewe (Kwa, Niger-Congo; Westermann 1907:100)

dɔ le ɲgɔ- nye, be ma- wɔ.
 work be front-my PURP 1.SG.SUBJ-do
 "I have to do a job."

35. Sango (Adamawa-Ubangi, Niger-Congo; Helma Pasch, p.c.)

baba ti mbi a- ga ti gwe.
 father of 1.SG 3.SG-come PURP go
 "My father was about to leave."

The Purpose Schema can also be held responsible for the development of future tenses in the Western Romance languages French, Spanish, and Italian, involving the Possession Schema ("X has Y") plus a purpose or goal adjunct ["(in order) to"], as sketched in (36), and the change from Purpose Schema to Future construction is illustrated in (37) (Fleischman 1982a:71):

36. "X has Y (in order) to Z"

37. Latin *canta-re* *habe-o* > French [*je*] *chante-r- ai*
 sing- INF have-I I sing- FUT-I
 "I have to sing" "I will sing"

In the course of this development, the auxiliary was reanalyzed as a person–number marker and the infinitive suffix as a Future tense marker. The semantic development leading to this shift can be described roughly in terms of the following scenario (cf. Fleischman 1982a:58–59):

Stage I. I have a letter	[Possession Schema]
II. I have a letter to mail	[Purpose Schema: Possession Schema + purpose/goal adjunct]
III. I have a letter to write	[the possessive meaning of <i>have</i> has been bleached out]
IV. I have to write a letter	[<i>have to</i> now functions as a unit lexeme expressing the modal notion of obligation]
V. I have to write	[the object complement can now be deleted]

While the English *have to* construction has not proceeded much further than Stage V, other languages such as French have developed the Purpose Schema into an expression denoting Future tense (see also Section 3.5).

The Purpose Schema can be said to “graft” a purpose or goal adjunct onto some basic event schema. This process may take place at a stage when that basic schema has already been grammaticalized to a category of tense, aspect, or modality. The following example from Bambara (Manding) illustrates the relevant process. In this West African language the Location Schema (“X is at Y”) has developed into a Progressive and Imperfective category, as exemplified in (38), where (38a) provides an instance of the basic schema and (38b) of the grammaticalized schema.

38. Bambara (Mande, Niger-Congo; Tröbs 1992)

- | | |
|---------------------------|-----------------------|
| a. donso be Segou. | b. à be taga (la). |
| hunter be.at Segou | 3.SG IMP go(ing) (at) |
| “The hunter is in Segou.” | “He is going.” |

Now, when the main verb is *nyini* “to seek, seeking,” an infinitive or purpose phrase, introduced by the infinitive particle *ka*, can be added whereby the notion of an inchoative or prospective aspect is expressed. (39a) is an instance of the grammaticalized Location Schema, like (38b), and (39b) of the Purpose Schema. Note that while *nyini* is the main verb in (39a), it has assumed the function of an aspect auxiliary in (39b), where the role of the main verb is now expressed by the purpose adjunct.

39. a. muso- w be dogo nyini
 woman-PL IMP firewood seek(ing)
 “The women are looking for firewood.”
- b. à be nyini ka sà
 3.SG IMP seek(ing) to die/dying
 “He’s about to die.”

The Evaluative and the Purpose Schemas have one important property in common with the event schemas discussed in Section 2.1.2: In all of them, the actual main verb is encoded as a complement or adjunct, respectively, of the event schematic predicate, and it is the latter that assumes a grammatical function. Some of the peculiar implications this process has

for the morphosyntax and even the phonology of the constructions concerned can be seen in the examples presented here; others will be discussed in the remainder of this chapter (see also Section 3.2).

2.1.4 On the significance of event schemas

Most canonical auxiliary constructions found in the languages of the world can be traced back to any of the source schemas presented in the preceding paragraphs. While the number of event schemas is limited, the linguistic diversity they give rise to is enormous. In particular, the basic schemas account for a wide range of morphosyntactic characteristics which can be observed world-wide in constructions expressing tense, aspect, and modality, such as the following:

- a. In languages that employ any of these schemas, the main verb is likely to exhibit some nonfinite or nominalized form, be it a participial, gerundial, or infinitival structure.
- b. Languages that make use of the Location or Motion Schema are likely to have some locative element, typically an adposition or a case inflection, as part of their grammatical marking.
- c. There are usually two, and in the case of the Location and Motion Schemas even three, kinds of linguistic elements employed to mark one grammatical function simultaneously. Thus, once grammaticalized, these event schemas notoriously violate the “one form, one meaning principle” advocated by a number of linguists, or the “transparency principle” proposed by adherents of the natural grammar paradigm (Mayerthaler 1981; Wurzel 1984, 1988; Dressler 1987).
- d. Another widespread characteristic is the presence of *discontinuous* grammatical markers. Languages, for example, in which the main verb is placed between the auxiliary and the nominalization marker and/or the locative marker are likely to develop discontinuous markers. Thus, in Maninka, a Mande language of the Niger-Congo family, the copula precedes and the locative postposition follows the main verb; the use of the Location Schema has therefore given rise to a discontinuous progressive marker *yé . . . lá*:

40. Maninka (Mande, Niger-Congo; Spears 1972:15/16)

a *yé nà lá*
 he be come at
 ‘He is coming.’

A distinction of these event schemas is therefore crucial for a better understanding of auxiliaries and the grammatical categories expressed by them. Each schema highlights different conceptual characteristics of an event, and this fact is immediately reflected in the morphosyntax of the resulting categories. We may illustrate this with the following example. A number of authors have drawn attention to the fact that in many languages, markers of perfect or completive aspects derive from verbs mean-

ing “finish” (see, e.g., Anderson 1973:35). However important this observation is, it does not tell us much about the linguistic structure of these aspects, essentially because the grammaticalization of verbs for “finish” can take entirely different courses depending on the source schema employed. One common source is provided by the Serial Schema and has the form: “X does Y, it is finished.” The second major source is the Action Schema, where the relevant form is: “X has finished Y”; we have discussed these schemas in the preceding sections. Now, in the case of the Serial Schema, the auxiliary is likely to be an intransitive verb that develops into an invariable post-verbal marker, while the main verb is used in its finite form; an example from Ewe has been provided in Section 2.1.3 [example (25)]. In the case of the Action Schema, on the other hand, the main verb (“Y”) has a nonfinite form while personal inflections are likely to be marked on the auxiliary, whose position in the clause is that of the predicate; that is, the auxiliary *precedes* the main verb except in canonical verb-final (SOV) languages, where it follows the main verb.¹⁰

Future tense categories in many languages of the world are based on the use of the Motion Schema (Bybee, Pagliuca, & Perkins 1991). In accordance with (b), this means that the main verb appears in some nonfinite form, as can be observed in the case of the English *be-going-to* future, for example, *He is going to come soon*, where the main verb *come* is encoded in an infinitival form. But the same motion event can also be encoded by means of the Serial Schema and, obviously, in such a case there will be no nonfinite form of the main verb. The following example taken from Turkana, an Eastern Nilotic language of northwestern Kenya, may illustrate this. Turkana has developed a “go” future on the basis of the Serial Schema of the form “X goes (and X) does (Y)” and, accordingly, the main verb (-mat, “drink”) appears in a finite form, exhibiting subject agreement with the auxiliary (= -pon- “go”/future tense).

41. Turkana (Eastern Nilotic, Nilo-Saharan; Dimmendaal 1983:136)
 ki-póní́ átó-mát- a
 we-go we- drink-PL
 “We shall drink”

In some cases it turns out to be hard or impossible to reconstruct the kind of basic schema from which a given tense or aspect category evolved. Three factors in particular can be held responsible for such a situation. First, as was pointed out, the list of schemas discussed in Section 2.1.1 is not exhaustive. It is therefore possible that some schema not contained in that list was involved. Second, many linguistic accounts, both grammars and typological treatments, do not supply enough information to allow for an unambiguous reconstruction of a source schema. In a number of works, for example, one can find statements to the effect that a given grammatical category is formed by means of a copula verb. Such statements are not very helpful since copulas may be involved in a number of different source structures such as the Location, the Equation, or the Accompaniment Schemas. What would be required in addition is some information on the

morphosyntax of the main verb concerned, for example, whether it is associated with a nominalizing, adverbial, or some other morphology. The third factor has to do with etymology, in that the genesis of the relevant construction may date back to a time that is no longer accessible to the historical linguist, and the exact nature of the source structure is therefore no longer recoverable.

Nevertheless, not infrequently it is possible to reconstruct the event schema concerned on the basis of the little evidence that may be available, as illustrated in the following example. In Kikuyu, Bemba, and many other Bantu languages there is a verbal inflectional suffix that denotes a completive or perfective aspect and can be traced back to a Proto-Bantu element **-ide* (or **-ile*). This suffix appears to be derived from the Proto-Bantu form **-gid-e*, “finish,” + Past, and it is therefore likely that a verb meaning “finish” figured in the event schema that gave rise to **-ide* (see Voeltz 1980). In accordance with what we have observed, this leaves us with two possible schematic structures, which are “X has finished Y” (i.e., the Action Schema), and “X does Y, it is finished” (i.e., the Serial Schema). Since Proto-Bantu, like all the 300-plus Bantu languages, had an SVO syntax placing the auxiliary before the main verb (cf. Claudi 1989), it is unlikely that the Action Schema was involved: In such a case one would have expected the auxiliary to develop into a verbal prefix rather than a suffix. The only alternative is therefore the Serial Schema, according to which **-ide* is derived from a post-verbal phrase “it is finished,” which cliticized on the preceding main verb and eventually developed into the aspect suffix that we find in the present-day spoken Bantu languages.

2.1.5 Conceptual shift

In all event schemas except the Serial Schema, the complement Y is typically an instance of the ontological categories OBJECT or SPACE (see Heine, Claudi, & Hünemeyer 1991, Chap. 2); that is, Y is likely to stand for some concrete, referential entity or a location, respectively. The syntactic function of Y is that of a complement that consists of a noun phrase when referring to the category OBJECT, as in the Action, the Volition, or the Possession Schema, and usually of an adverbial phrase when referring to the category SPACE, as in the Location, the Motion, or the Manner Schema. Now, what happens in the genesis of auxiliiation is that, instead of the categories OBJECT and SPACE, instances of a different ontological category, that of ACTIVITY, are allowed to assume the rôle of the complement Y or, to use an alternative terminology (Freed 1979:25ff.), the predicate takes *events*, rather than objects, as its complement. “ACTIVITY” is a cover term for an ontological category that typically refers to situations such as acts, actions, activities, processes, events; it roughly corresponds to what Lyons (1977:483) calls a “dynamic situation” (see Heine, Claudi, & Hünemeyer 1991, Section 2.4.1). Instances of the category ACTIVITY, or “events,” are linguistically encoded typically as verbs; in accordance with their function as nominal and adverbial complements,

respectively, they appear in some nonfinite (gerundival, participial, or infinitival) form, and, if they replace a complement of the category SPACE, they carry the locative morphology required for locative adverbial phrases.

A given grammatical concept may be derived from more than one source schema. Kuteva (1991), for example, concludes on the basis of a survey of 117 auxiliary constructions in 11 Indo-European, Finno-Ugric, and Sino-Tibetan languages that "(i) a given lexical structure may (presumably due to variance of imagery within the grammars of different languages) develop into the auxiliary expressions of different gram-types in different languages, and (ii) a given gram-type may be expressed by auxiliary constructions derived from different lexical structures." Thus the English future marker *be going to* is based on the Motion Schema, while the *will* future is historically derived from the Volition Schema, and similarly, in Nyabo, a West African Kru language, both the Motion Schema and the Possession Schema have been made use of for the expression of future tense, as can be seen in (42a) and (42b), respectively, which both mean 'He will go to Pleebo.'

42. Nyabo (Kru, Niger-Congo; Marchese 1986:139)

- | | |
|---|--|
| a. ʒ mɪ̃ plībɔ̃ mū-ɛ̃
he go.IMP Pleebo go-NOMIN | b. ʒ kʼɔ̃ b- ʒ mū plībɔ̃
he has that-he go Pleebo |
|---|--|

Diola Fogany, another West African Niger-Congo language, has employed both the Location Schema and the Serial Schema to develop a Past Progressive aspect, as is suggested by (43a) and (43b), respectively.

43. Diola Fogany (West Atlantic, Niger-Congo; Heine & Reh 1984:118)

- | | |
|---|--|
| a. i-lakɔ̃ fu-ri
I-sit INF-eat
"I was eating" | b. i-lakɔ̃ i-ri
I-sit I-eat
"I was eating" |
|---|--|

Conversely, one and the same event schema can give rise to the expression of several grammatical concepts. For example, in a number of languages, ACTIVITY complements have two different kinds of instantiation: They may be conceived either as time-stable/static entities or as dynamic (goal-oriented) entities, and for each of them, a different linguistic form is employed. In European languages, complements which are conceptualized as static entities are encoded typically in a passive/past participle form and dynamic entities in an infinitive form. This distinction tends to be, or has been, exploited for different lines of grammaticalization: Static complements are likely to be grammaticalized to perfect/perfective/past categories, while dynamic complements give rise to modal concepts, which again may be grammaticalized to future tense categories. An example is provided by the Possession Schema ("X has Y"), which constitutes the source for several different aspect categories. As we observed above, for example, the Latin *habere* + nonfinite verb periphrasis, which represents one instance of this event schema, has been grammaticalized in two

Table 2.2. Basic Event Schemas and Some More Common Grammatical Functions Derived From Them

Location	progressive, ingressive, continuous
Motion	ingressive, future, perfect, past
Action	progressive, continuous, ingressive, completive, perfect
Volition	ingressive, future
Change-of-state	ingressive, future
Equation	resultative, progressive, perfect, future
Accompaniment	progressive
Possession	resultative, perfect, future
Manner	progressive

different ways in the Romance languages. On the one hand, it involved a static complement in the Passive Perfect participle and developed into Perfect and related grammatical categories in languages such as French or Spanish. On the other hand, the complement was a dynamic concept encoded as an infinitive form, and in this case the Possession Schema was responsible for the rise of future tenses in these languages (Fleischman 1982a; Pinkster 1987; Salvi 1987; Green 1987). Similar observations can be made in other languages, for example, in Mongolian (see Binnick 1976:43). As we have seen, the two kinds of construction, both involving *have* predicates, can ultimately be linked to different source schemas.

The main associations between source schemas and resulting grammatical functions are listed in Table 2.2. As we will see in Section 2.7.2, however, these event schemas are not the only source structures employed to develop grammatical categories of tense, aspect, and modality. Furthermore, the functions listed are not the only ones derived from the respective event schemas; a more systematic treatment is attempted in Section 2.5.

With the introduction of an ACTIVITY complement, the predicate loses its function of expressing the main-verb semantics, the latter shifting from the predicate to the complement, and the erstwhile predicate tends to be desemanticized and to assume a grammatical function such as expressing some temporal, aspectual, or modal contours of the verbal complement. Thus, the structure [X-verb-complement] of the event schemas listed in Section 2.1 turns into a structure [X-grammatical concept-main verb]. That this process has considerable implications for the syntactic, morphological, and even the phonological structure of the entities concerned will be shown in Section 2.4. Note that this process is always limited to specific contexts. For example, the development from Motion Schema to Future construction affected the English verb *go to* in its Present Progressive form (*be going to*) but not in other tense-aspect forms.

Within this process we are dealing, on the one hand, with a cognitive shift from OBJECT or SPACE complement to ACTIVITY complement and from lexical-verbal to grammatical concept, and on the other hand, with a morphosyntactic shift from nominal or adverbial to verbal constitu-

ent. The evidence available suggests that the former shift precedes the latter (see Section 2.4). For example, Freed (1979:83ff.; see also Brinton 1988:82–84) notes that English items like *begin*, *start*, *continue*, or *stop* function as aspectualizers rather than main verbs even when taking noun complements (e.g., *start dinner*) since the latter refer to events rather than objects. Note, however, that these items, due to their lexical content, can be assumed to have had eventlike complements already in their source form (Ulrike Claudi, p.c.). That, in the process of grammaticalization like the one considered here, conceptual shift precedes morphosyntactic shift, has been argued for by a number of authors (Givón 1975; Heine, Claudi, & Hünemeyer 1991); concerning an alternative position, see Bybee, Pagliuca & Perkins (1991).

Thus, the complement may still be a noun even if it is already conceived of as an event and, hence, as belonging to the conceptual domain of the category ACTIVITY. Similarly, Brinton (1988, Chap. 3) argues that in the grammaticalization of English aspectualizers, the development of new semantic and functional properties appears to be immediate, while the acquisition of corresponding new syntactic forms proceeds slowly.

2.2 The Overlap Model

In the following paragraphs, concrete concepts or event schemas giving rise to the expression of grammatical concepts are referred to as *source* items and the latter as *target* items. That the transition from source to target concept is suggestive of a linguistic process that is continuous rather than discrete, has been pointed out by a number of scholars. García (1967:866), for example, proposes a linguistic continuum ranging from main verb, to aspectual, to modal, to *have* and *be*, and finally to inflection, and Brinton (1988, Chap. 3) describes such a continuum with reference to aspectualizers in English. When in the following, we are concerned with stages of development then we have to be aware that these “stages” merely represent certain points, perhaps focal points, along the relevant continuum; they are in no way suggestive of discrete entities. Furthermore, the outline to be presented here is tentative in a number of respects; at the present stage of research we can present no more but a schematic version of a model.

When an expression used for a lexical source concept is transferred to also designate a grammatical target concept then the result is *ambiguity* since one and the same expression refers simultaneously to two different concepts (cf. Marchese 1986:101ff.). Subsequently, the expression may be further extended to contexts where it no longer refers to the source concept but is exclusively a marker of the target concept. For example, the phrase *is going to* has a verbal source meaning in (1a), where it is an instance of the Motion Schema (“X moves to Y”), while it is ambiguous in (1b) since it may have either a verbal or a grammatical meaning, viz. that of a future tense marker, and in (1c) a verbal meaning is ruled out: *is going*

Stage:	I	II	III
Type of concept:	Source	Source Target	Target

Figure 2.1. An Overlap Model of conceptual shift.

to is exclusively a grammatical marker; that is, the Motion Schema (“X moves to Y”) is replaced by the schema [X–grammatical concept–main verb] (cf. Gildea 1989).

1. a. John is going to town soon.
- b. John is going to work soon.
- c. John is going to get sick soon.

The structure underlying the transition from a full verbal concept to a grammatical concept can be described as in Figure 2.1. Example (1a) is an instance of Stage I, where *is going to* can only refer to the source concept of physical motion. Stage II is marked by ambiguity: It involves the source concept if the complement *work* is a noun but the target concept when the complement is a verb (1b). That ambiguity is in fact a predictable phenomenon in the development of auxiliaries has been emphasized by Marchese (1986:271), who argues that structural ambiguity constitutes a necessary step in the reanalysis of verbs as auxiliaries. At Stage III, only the target reading is possible; that is, the phrase *is going to* can only be interpreted as a tense expression, namely that of a future marker (1c).

Figure 2.1 presents a simplified account of the actual process, and it is confined to only one segment of the overall development concerned. The structure sketched in Figure 2.1 has both a diachronic and a synchronic dimension: diachronic in that the development from Stage I to III is likely to reflect a historical process, and synchronic in that Stage I presents the most concrete concept (relating to physical motion) and Stage III the most abstract concept (a grammatical function) or, in other words, Stage I presents the lexical and III the grammatical meaning, with II being ambiguous between the two meanings.

A number of typical Stage II situations that arise in the transition of the Motion Schema (see Section 2.1) from expressing physical motion (“go to”) to expressing future tense (“be going to”) are described by Marchese (1986:101) under the heading “Ambiguity” by using examples such as the following:

2. Klao (Kru, Niger-Congo; Marchese 1986:101)
- do-a mu de diì
- Doe-IMP go thing eat
- a. “Doe goes (in order) to eat.”
- b. “Doe is going to eat.”

The ambiguity of Stage II is lifted once the purpose reading (2a) is ruled out and only the future reading (2b) is possible, that is, when Stage II has

given way to Stage III. This is the case, for example, when the auxiliary is allowed to co-occur with the same item as the main verb, as in English *John is going to go soon* or in (3), which is taken from another Kru language closely related to Klao:

3. Tchien Klahn (Kru, Niger-Congo; Marchese 1986:102)

ɔ mü gwɪɫ mü

he go town go

‘He will go to town.’

In her discussion of English modal auxiliaries, Coates (1983:15–17) distinguishes between ambiguity and merger. From the data looked at here it does not always become clear which of the two is involved, and in such cases the label ‘ambiguity’ is used as a cover term for both.

The Overlap Model, as the structure presented in Figure 2.1 will be called, does not only apply to conceptual transfer; rather it applies to other domains of language structure as well. Once a given expression is transferred from source concept to target concept, that is, from denoting a verb to carrying a grammatical function, it loses in properties characteristic of its former category. Thus, a verb loses, for example, the ability to passivize, to be nominalized, to form imperatives, to inflect for person, tense, or negation, to be governed by auxiliaries, and/or to take a nominalizer or complementizer, etc. At the same time, it acquires the properties of a grammatical marker. The English verb *need*, for example, which has a main verb semantics and a main verb morphosyntax in (4), may be said to have a modal/grammatical meaning in (5) and (6). But whereas in positive declarative sentences like (5) it still has the morphosyntax of a main verb, undergoing number agreement, taking the complementizer *to*, permitting *Do*-Support, and optionally taking the full range of possible auxiliaries, it behaves like either a main verb (6a) or a modal auxiliary (6b) in negative and interrogative sentences such as (6) (Pullum & Wilson 1977:754).

4. Bill needs you.

5. Bill needs to write you a letter, doesn’t he?

6. a. Does Bill need to write you a letter?

- b. Need I say more?

Thus, once the transfer from source to target concept takes place, this process is likely to trigger a morphosyntactic process from a verbal to a grammatical morphosyntax, as sketched in Figure 2.2.

The Overlap Model also applies to the phonology of the expression concerned. Once a verb has been grammaticalized to a marker of tense,

Stage:	I	II	III
Morphosyntax:	Verbal	Verbal Grammatical	Grammatical

Figure 2.2. An Overlap Model of morphosyntactic shift.

Stage:	I	II	III
Phonological form	Full	Full	
of expression:		Reduced	Reduced

Figure 2.3. An Overlap Model of erosion.

aspect, or modality, it is likely to undergo “auxiliary reduction” (Zwicky 1970; Pullum & Wilson 1977:743), or erosion, as I will call it (see Heine & Reh 1984); that is, its form tends to be phonetically eroded. This process first leads to free variation at Stage II, where the full form and the reduced forms co-occur as functionally equivalent variants, until the full form gives way to the reduced form, as in Figure 2.3.

English auxiliaries like *need* are at Stage I; that is, they have no reduced form, while *shall*, *will*, *be*, *have*, etc. are at Stage II in that they may be either used in their full form or in a reduced form. It would seem, however, that *will* and perhaps also *shall* have reached Stage III, at least for substantial numbers of speakers who rarely use the full forms for the future function. It may happen that, when Stage III has in fact been reached, the Stage I or Stage II situation survives in some restricted contexts. For example, in accordance with the Volition Schema of Section 2.1, the Swahili verb *-taka*, “want,” has been grammaticalized to a future tense marker in the eroded form *-ta-* (Stage III). In subordinate clauses involving the relative clause marker *-o/ye*, however, the Stage I form *-taka-* has survived:

7. a. *a- taka ku- imba* “s/he wants to sing”
3.SG-want INF-sing
- b. *a- taka- ye- imba* “(s/he) who will sing”
3.SG-FUT-3.SG.REL-sing
- c. *a- ta- imba* “s/he will sing”
3.SG-FUT-sing

Since conceptual shift is the first obligatory step in grammaticalization, it follows that all other processes are dependent on it. This fact determines the interrelationship between the three models (see Section 2.4).

We may illustrate the interaction of different models with reference to the English item *be going to*, which has been used in (1) as an instance of the Overlap Model of conceptual shift. This item may also serve as an example of the erosion model, as can be seen in (8).

8. a. John is going to town soon.
- b. John is going to get sick soon.
- c. John is gonna get sick soon.
- d. *John is gonna town soon.

In (8a), *is going to* has its lexical meaning of directed motion. When marking a grammatical function, it may either occur in its full form (at

least in written English), as in (8b), or in a reduced form (*is gonna*), as in (8c). Since erosion follows conceptual shift, the reduced form is ruled out when *is going to* is used in its lexical meaning, as in (8d) (Gildea 1989:37). Thus, the reduced form is confined to contexts where it refers to the grammatical meaning (but see Section 3.3).

More research is required on the exact nature of the overlap Stage II, or the zone of overlapping, as Stolz (1991b) calls it, especially with regard to conceptual/semantic shift. The evidence available suggests that two basic kinds of Stage II ambiguity can be distinguished, which may be glossed, respectively, as *either/or* and *both/and* situations; Coates (1983:15–17) refers to the former as “ambiguity” and to the latter as “merger.” Either/or situations are present when a given Stage II form has two distinct meanings that are mutually exclusive and require the speaker and/or hearer to choose between either of them. Both/and situations, on the other hand, are mutually compatible and do not require a decision as to whether the source or the target meaning of a given form is intended since both are present to some extent. The difference between the two kinds of situation may be illustrated with the English modal auxiliaries *must* and *should*. Both have an agent-oriented (“deontic” or “root”) sense as their source and an epistemic sense as their target, but in Stage II contexts, *must* is suggestive of an *either/or* situation and *should* of a *both/and* situation, as the English examples (9) and (10), volunteered by Coates (1983:16–17), suggest.

9. He must understand that we mean business.

10. Rutherford suggested to Marsden that he should follow this up.

In the case of (9), Coates (1983:16) argues, a choice has to be made between the agent-oriented sense (“It is essential that he understand that we mean business”) and the epistemic sense (“Surely he understands that we mean business”), the two senses being mutually exclusive. In the case of (10), on the other hand, which according to Coates presents a merger between the agent-oriented (source) and the epistemic (target) senses, it is not necessary to decide between the two senses to understand the meaning of the sentence. It remains to be investigated whether the divergent behavior of *must* as opposed to *should* is suggestive of a different kind of grammaticalization process. Bybee, Perkins, and Pagliuca (forthc., p. 26), for example, suspect that the former is the result of metaphorical transfer, whereas the latter is suggestive of an inferential mechanism and may be due to the conventionalization of implicature; we will return to this issue in Section 3.1.

Typically, the Overlap Model relates to variation in the linguistic or extra-linguistic context, where each stage is associated with a different context. It may, however, also correlate with other factors, such as the behavior of certain speakers or groups of speakers. Pullum and Wilson (1977:954), for example, observe that English “main-verb *have* behaves like a main verb for some people, like an auxiliary for others, and like either a main verb or an auxiliary for many others” (see Section 3.2).

Stage:	I	II	III
Type of uses:	Source	Source Target	Target

Figure 2.4. An Overlap Model of a minimal grammaticalization chain.
(= Figure 2.1)

2.3 Grammaticalization Chains

The processes sketched in Section 2.2 are immediately responsible for the rise and development of chainlike structures, and in fact auxiliiation in both its diachronic and its synchronic manifestations can be described as a *grammaticalization chain*. This notion was introduced by Craig (1991) and Heine, Claudi, & Hünemeyer (1991, Chap. 8) and expanded by Heine (1992). A grammaticalization chain has the following characteristics:

- It refers to a linguistic form that consists of a sequence of at least two distinct but overlapping uses, where one is referred to as the *source* and the other as the *target* use. An idealized structure of a minimal grammaticalization chain is presented in Figure 2.4 (cf. Section 2.2).
- The relation between source and target use is clearly defined: The former is both *historically earlier* and less *grammaticalized* than the latter [see (f)].
- The reason for referring to this structure as a chain can be seen in the overlapping behavior it exhibits. This behavior affects all components of the relevant linguistic form, from its semantic to its morphosyntactic, and even its phonological component (see Sections 3.1 and 3.3)
- The presence of overlaps is responsible for the fact that (i) grammatical categories are inherently *ambiguous* in certain uses, and that (ii) grammaticalization chains are *unidirectional*,¹¹ extending from historically earlier/less grammaticalized to later/more grammaticalized uses.
- A grammaticalization chain has both a diachronic and a synchronic dimension; diachronic in that it is the result of language change, and synchronic in that it consists of a range of synchronically defined uses [see (b)].
- Grammaticalization chains can be defined as linearly structured family resemblance categories (Heine 1992).

My concern here is with one specific kind of grammaticalization chain, one that will be referred to as Verb-to-TAM chain: It is made up of a verbal/lexical structure at one end and of a grammatical marker of tense, aspect, modality, etc. at the other.

2.4 The Verb-to-TAM Chain

On the basis of the observations on grammaticalization made in the preceding section, we are now in a position to account for properties of auxiliaries such as those summarized in Section 1.7. The question of what motivates the development of auxiliaries is a complex one (see Bybee 1985:202–5; Traugott & Heine 1991:9–10); one possible, though not the only, answer that has been proposed is problem-solving (Heine,

Claudi, & Hünemeyer 1991:29; Traugott & Heine 1991:9), in particular the search for expressions for a notional range of abstract functions that serve to qualify verbal situations with reference to their temporal state, their temporal contours, and the type of reality associated with them, etc. These functions are grammatical concepts relating primarily to tense, aspect, and modality. In order to develop linguistic expressions for these concepts, the main strategy is to draw on a small pool of event schemas describing concrete situations. The most common of these have been discussed as source schemas in Section 2.1.

2.4.1 Parameters

Once these schemas are pressed into service for the expression of grammatical concepts, this is likely to trigger a number of linguistic shifts. Some of these shifts will now be looked at in more detail. Each of them can be viewed as constituting a distinct continuum or chain; for the sake of descriptive convenience, however, I will attempt to define a few salient stages or focal points along them. Four chains, each relating to a different aspect of linguistic behavior, will be distinguished referring, respectively, to the semantic (desemanticization), morphosyntactic (decategorialization), morphophonological (cliticization), and phonetic shifts (erosion) concerned.

Desemanticization. The human world provides perhaps the most obvious template for expressing abstract concepts,¹² and the concepts figuring in the source schemas in Section 2.1 typically belong to a concrete, human world. One effect this process has is that inanimate concepts are treated like human ones, that is, that the event schemas lose their association with the world of human beings (the ontological category PERSON), they come to be extended to a world where the distinction human versus nonhuman is immaterial (OBJECT).

The term *desemanticization*, frequently also referred to as “semantic bleaching,” has been introduced by Heine and Reh (1982) and Lehmann (1982) to refer to a process whereby in specific contexts a lexical item is emptied of its lexical semantics and acquires a grammatical function; concerning a more detailed analysis of this term, see Section 3.1. In the cognitive process leading to the emergence of Verb-to-TAM chains, desemanticization has the effect that the event schemas presented in Section 2.1 lose their concrete content and turn into devices employed for the expression of grammatical concepts. In a simplified form, this development can be described in terms of the following stages:

- I. The subject is typically human,¹³ the verb expresses a lexical concept, and the complement a concrete object or location.
- II. The complement comes to express a dynamic situation.
- III. The subject is no longer associated with willful/human referents, and the verb acquires a grammatical function.

Decategorialization. This term has been coined by Hopper and Thompson (1984); Hopper (1991:22) proposes the following definition: "Forms undergoing grammaticization tend to lose or neutralize the morphological markers and syntactic privileges characteristic of the full categories Noun and Verb, and to assume attributes characteristic of secondary categories such as Adjective, Participle, Preposition, etc." The cognitive processes described have an immediate impact on the morphosyntactic structure used for the expression of event schemas, in particular on the verb and the complement that both undergo decategorialization. With the shift from lexical to grammatical content, the verb increasingly loses its verbal properties and the complement its nominal properties such as its markers of nonfiniteness. In the case of schemas involving adverbial phrases as complements, the complement also tends to lose its adverbial morphology. Perhaps some more salient stages within this development are:

- I. The verb exhibits a fully verbal morphosyntax and the complement has a noun phrase or an adverbial phrase as its nucleus. The phrase "as its nucleus" refers to the fact that in cases where the complement is an adverbial phrase rather than a noun phrase, some adverbial morphology is involved in addition.
- II. Instead of a noun, the complement nucleus consists of a nominalized/nonfinite verb.
- III. The verb loses in verbal properties such as the ability to form imperatives, to be nominalized, to passivize, and it may no longer have a noun as its complement nucleus.
- IV. The verb loses further verbal properties such as its ability to be negated separately and to occur in other positions in the clause, and the complement loses in nominal (and adverbial) properties, such as its nominalizing and/or adverbial morphology.
- V. The verb loses virtually all remaining verbal properties, and the complement acquires the morphosyntax of a main verb, although it may retain some relics of a nominalizing and/or adverbial morphology.

The result of decategorialization is that the source structure [subject–verb–complement] turns into a structure [subject–grammatical marker–main verb].

Cliticization. With the loss of its lexical content, the verb increasingly develops into an "operator" on its erstwhile complement, which again increasingly assumes the function of the main verb. This development has the effect that the verb turns into a morphophonological appendix of the complement/main verb, occasionally also of some other constituent; note, however, that in many West African languages, the verb appends to the subject pronoun rather than the complement/main verb (see Section 2.7.2). With reference to the morpheme status of the verb, cliticization tends to involve the following stages:

- I. The verb forms an independent word. At this stage, the verb and its complement are clearly distinct constituents. They may, however, devel-

- op into a tight syntactic unit, and they can then be described as what Palmer (1974:5–18, 166–211) and Brinton (1988:70) call a *complex phrase*, where expressions of tense, negation, etc. may still be marked simultaneously on both, for example, *We can't not go with them*.
- II. The verb loses its status as a separate word and develops into a clitic. The verb and its complement are now likely to form a *simple phrase*, which permits only one expression of tense, negation, passivization, etc. (e.g., *?He isn't not going*; cf. Brinton 1988:70–71).
 - III. The verb develops into an affix. The verb and its complement merge into a single word unit, where the erstwhile verb constitutes an affix and the erstwhile complement the main verb stem.

Note that cliticization need not affect the main verb, even if this is normally the case. Rather than coalescing with the main verb, the auxiliary may just as well be attached to some other constituent or turn into an independent word, typically an adverb (see Section 2.7.2).

Erosion. In addition to these conceptual and morphosyntactic changes, there is also a phonetic one, involving the following major stages:

- I. The verb has its full phonological form.
- II. The phonological substance of the verb tends to be eroded.
- III. The verb loses its ability to carry distinctive tone or stress.

Furthermore, one not uncommon form of erosion can be seen in the fusion of two or more elements involved in the construction concerned, for example, *going to* > *gonna*. The parameter of erosion will be looked at in more detail in Section 3.3.

It goes without saying that not all stages are relevant in a given instance of auxiliiation. For example, in cases where the verb of the source schema does not require a human subject. Stage III of the desemanticization chain is redundant, or Stage III of the decategorialization chain is only applicable in the case of auxiliaries where the ability to passivize or to form imperatives is a property of the main verb figuring in the relevant event schema; obviously, an auxiliary cannot lose the ability to form imperatives if its lexical source did not already have that ability, or English modals such as *may*, *can*, *must*, *will*, etc. could not lose the nonfinite marker *to* because historically it was never there.¹⁴

Note that, in accordance with the Overlap Model sketched in Section 2.2., there is always at least one intermediate stage between the stages distinguished in the present section. For example, in the following Swahili example of the Action Schema ("X does Y") involving the auxiliary *kwisha* (< *ku-isha* "to end, to be finished") as an ALREADY-aspect marker, overlapping involves both decategorialization and erosion: In (1a), the main verb *ku-fika*, "to arrive," appears in its nominalized, nonfinite form, while in (1b) it is decategorialized in that it lacks the infinite marker *ku-*, and in (1c) the auxiliary *kwisha* has undergone both cliticization and erosion; that is, it is reduced to a monosyllabic verbal prefix *-sha-*. All three

sentences are at the same stage of desemanticization; that is, they have the same meaning and are functionally equivalent variants of present-day spoken Swahili.

1. Swahili (Bantu, Niger-Congo)

a. a- me- kwisha ku-fika. "He has already arrived."

3.SG-PERF-ALREADY INF-arrive

b. a- me- kwisha fika.

c. a- me- sha- fika.

Furthermore, as we have emphasized, the stages distinguished here are merely some focal instances along the chains considered. For example, with reference to the desemanticization chain, Plank (1981:59) shows that in the development of modals, the following three semantic stages of modality can be distinguished between full verb and "full auxiliary" status: dynamic > agent-oriented ("deontic") > epistemic¹⁵; more examples can be found in Section 2.5.

Finally, since the chains considered are continuous in nature, the notions used to characterize some more salient stages are meant merely for descriptive convenience. Thus, a given item proceeding from one stage to another loses in lexical properties and gains in grammatical ones, even if this has not been indicated in the scales. For example, within the desemanticization chain, the notion "grammatical concept" refers to different entities in Stages II and III, respectively. Whereas at Stage II the grammatical concept still has some lexical content and, hence, is more concrete, this is no longer the case at Stage III, where virtually its only function is that of a basic grammatical concept. Accordingly, we have to distinguish, for example, between Stage II concepts and Stage III concepts. The Venda item Twa¹⁶ is an instance of a chain that has the verbal meaning "spend the day" at one end, as in (2), and the grammatical function "continually" at the other, as in (3). If the action described in (3) takes place during the night, then an item other than Twa has to be used. This item is lala, which constitutes another chain, having the verbal meaning "lie down, recline, fall asleep" at one end and the grammatical meaning "continually (at night)" at the other. An example of this grammatical use is presented in (4).

2. Venda (Bantu, Niger-Congo; Poulos 1990:326)

Nd- o Twa fhano "I have spent the whole day
1.2G-PERF here here."

3. Vha Twa vha tshi nthwa "They continually beat me."
3.PL 3.PL DEP 1.SG.OBJ.beat

4. Vh- o lala vha tshi imba "They spent the night
3.P1-PERF 3.PL DEP sing singing."

Although Twa and lala basically express the same grammatical concept, they have retained part of their lexical semantics, which can be trans-

lated, respectively, as “during the daytime” and “during the nighttime”; with reference to the desemanticization chain they may be said to be Stage II concepts. There is a third item in Venda that also expresses the notion of a continuous aspect. This item, *dzula*, covers the conceptual range extending from the verbal meaning “sit, stay, live” to the grammatical function of a continuous marker (Poulos 1990:325ff.). In its latter capacity, *dzula* appears to lack any lexical content and, hence, to correspond more closely to the notion of a Stage III concept (cf. Section 3.6).

2.4.2 Stages

It remains to be investigated how the different chains sketched in Section 2.4.1 are interrelated. A first approximation is attempted in Figure 2.5; the correlations described there constitute no more than a scenario based on impressionistic observations; the relative ordering of stages is to be seen as a first hypothesis that needs to be checked against the background of a larger corpus of data. What this scenario suggests in particular is that conceptual shift from lexical to grammatical content (= desemanticization) precedes all other shifts (cf. Givón 1975, 1979; Heine & Reh 1984), and that cliticization and erosion normally start later than the other shifts.

A number of additional chains could be proposed, but most of them can be related to those considered previously. This applies, for example, to the chain defined on the basis of class membership, that is, to the transition from open-class to closed-class items: At Stage A, the verb belongs to the open class of verbs. With each successive stage, the size of class membership decreases, and at the final stage there is a minimal number of items belonging to the same class or paradigm, the latter being reduced to a handful of members, in extreme cases of no more than a single member.

The seven overall stages distinguished in Figure 2.5 will now be briefly discussed. Note that, when providing exemplification for a given stage of auxiliation, I am referring exclusively to one particular use of the item concerned. As we will see in the following, a given item may have more than one use, with each relating to a different stage. Furthermore, the attributes to be presented are not definitional ones; rather they are intended to characterize some more salient points along the Verb-to-TAM

Overall stage	Stage						
	A	B	C	D	E	F	G
Desemanticization	I	II	III				
Decategorialization	I		II	III	IV	V	
Cliticization	I				II		III
Erosion	I				II		III

Figure 2.5. Possible correlations between the different kinds of changes along the Verb-to-TAM chain.

chain that appear to be cross-linguistically relevant; languages differ considerably with regard to the way and the chronological order in which their phonological, morphological, and syntactic structures are manipulated in the process of grammaticalization.

Stage A. Stage A is the situation of concrete source schemas, where the verb has its full lexical meaning and the complement typically refers to a concrete object. In (1), some English examples are presented, illustrating, respectively, the Location (1a), Motion (1b), Action (1c), and Volition Schemas (1d).

1. a. Judy is at the station.
- b. The train came from Hamburg.
- c. He took that train.
- d. My friend needs a ticket.

Stage B. This is the stage where, to use Bolinger's (1980:297) wording, a "verb starts down the road of auxiliarieness." What distinguishes Stage B items from those of Stage A is that the complement refers to a dynamic situation rather than to an objectlike entity. At this stage, items are in a group together with other items that are unambiguously classified as verbs, English *avoid* or factive verbs like *regret*, *ignore*, etc. being examples of Stage B items in sentences such as the following:

2. a. He *avoided* getting caught.
- b. He *regretted* embarrassing me.

Stage B items typically have the following characteristics: (a) While taking nominal complements, they are also associated with nonfinite verbs as complements. (b) Subject reference identity between verb and complement is not a requirement. (c) The verbal complement need not be confined to one kind of construction; rather there may be functionally different but competing constructions such as gerundial, participial, or infinitival complements. (d) The complement may also consist of a clausal construction rather than a nonfinite verb. The range of complement variety that Stage B items exhibit can be illustrated by the English verb *expect*, as in (3b–e) (cf. García 1967:858–59), (3a) being an example of a Stage A use:

3. a. I *expect* a visitor tonight.
- b. I *expect* to go.
- c. I *expect* John to go.
- d. I *expect* that I will go.
- e. I *expect* that John will go.

The Swahili item *-taka*, "want," is another example of this stage. While (4) is an instance of Stage A, (5) and (6) mark Stage B, where (5) has an infinitival and (6) a clausal complement in the subjunctive mood, the latter being required in the case of subject reference nonidentity.

4. Swahili

a- na- *taka* kazi.

3.SG-PROG-want work

“He wants a job.”

5. a- na- *taka* ku- ni- saidia

3.SG-PROG-want INF-1.SG.OBJ-help

“He wants to help me.”

6. a- na- *taka* ni- m- saidi-e.

3.SG-PROG-want 1.SG-3.SG.OBJ-help- SUBJ

“He wants me to help him.”

Stage C. At this stage, the subject NP is no longer confined to willful/human referents; that is, selectional restrictions relating to the subject tend to be eliminated and the verb comes to express some “formulaic” function such as a notion of tense, aspect, or modality. The shift from lexical/verbal to grammatical function has the effect that the verb can now take a complement having the same etymon as its nucleus,¹⁷ as can be seen in (7).

7. Rachel *has to* have a new flat.He *is to* be here by noon.Desmond *keeps* keeping dogs.

Stage C items are likely to include what is often referred to as quasi-auxiliaries, semi-auxiliaries, or catenatives,¹⁸ English aspectualizers like *start* or *stop*, for example, belong here, as do what Palmer (1983) calls the “semi-modals” *be able to*, *have (got) to*, and *be going to*, at least in some of their uses. What Mkhathshwa (1991) calls “deficient verbs” in Zulu, that is, verbs that have acquired some “formulaic” or schematic function, are also suggestive of Stage C status. Some of these items are listed in Table 2.3.

Table 2.3. Some “deficient verbs” and Their Lexical Sources in Zulu (Mkhathshwa 1991)

<i>Main verb use</i>		<i>“Deficient verb” use</i>	
-sala	“stay behind”	-sale	“do afterwards”
-qala	“begin”	-qale	“do first”
-qeda	“finish”	-qede	“do as soon as”
-shesha	“hurry”	-sheshe	“do quickly”
-hamba	“go”	-hambe	“do all the way long”
-dlula	“pass, surpass”	-dlule	“do nevertheless”
-fika	“arrive”	-fike	“do first”
-buya	“return”	-buye	“do again”
-phinda	“repeat”	-phinde	“do again”
-shaya	“hit”	-shaye	“do completely”
-cisha	“extinguish”	-cishe	“do almost, nearly”
-phika	“refuse, deny”	-phike	“just do, merely”
-suka	“move away”	-suke	“just do, merely”
-mana	“stop, halt”	-mane	“just do, merely”

Most commonly the “formulaic” functions of Stage C items relate to the duration, the speed, or the boundary characteristics of events, and these items tend to be associated with characteristics such as the following:

- a. The verb is now associated strongly with a nonfinite verb as its complement nucleus. Even if the complement is still a noun, it is likely to refer to a concept of the ontological category ACTIVITY; that is, rather than an object, it denotes an event (Freed 1979), something that “occurs” or “takes place,” as can be seen in (8).
8. He *started* the concert.
She *stopped* the car.
- b. Subject identity between verb and complement now becomes a requirement. There may be exceptions in certain contexts, as in the following example provided by Freed (1979:146), where the complement of *start* is an activity term:
9. She *started* him working at \$3.50 an hour.
- c. The verb and its complement refer to the same time.
- d. the verb may not take clausal complements. With reference to English, this means, for example, that *that* clauses are ruled out as complements of English aspectualizers (Freed 1979:146).
- e. The ability of the verb to express the whole range of TAM distinctions is reduced in some way, even if only for reasons of semantic or morphological compatibility. Few English aspectualizers, for example, can take the *-ing* form as a nonfinite verb complement if they themselves are in the present progressive aspect; examples such as *He is stopping smoking* being exceptional (cf. Freed 1979:149–50).

What characterizes Stage C, as opposed to Stage B items, has been described by Brinton (1988:74) with reference to English aspectualizers, namely “that the aspectualizer and following verbal function as *a single semantic unit*, or that the aspectualizer does not express independent (lexical) verbal meaning.” In accordance with the terminology introduced by Mathews (1978), we may call C the “budding stage” in grammaticalization.

Stage D. Stage D items are not seldom referred to by grammarians as “defective” verbs; that is, their most striking characteristic is their de-categorialized status, which typically means that (a) the verb tends to lose its ability to form imperatives, to be nominalized, or to passivize, and (b) it is no longer associated with nouns as its complement nucleus; (c) while Stage C items may still take different kinds of nonfinite verb forms as complements, like English aspectualizers that either take infinitival (*He continued to teach.*) or *-ing* complements (*He continued teaching.*), Stage D items are associated with only one kind of nonfinite verb form.

Stage D may be illustrated by the German *werden*-future, which is derived from the Change-of-State Schema (“X becomes Y”), exemplified in (10), while (11) is an instance of Stage D.

10. German

Er wird stark.

"He is going to be strong."

11. Er wird kommen.

"He'll come/he's going to come."

What characterizes (11) vis-à-vis (10) is that it lacks verbal properties such as the following: in (11), *werden* denotes exclusively a grammatical concept, and it may not be inflected for tense; that is, while (10) has a corresponding past tense form (12a), there is no corresponding past tense form for (11), as (12b) shows.

12. a. Er wurde stark.

"He became strong."

b. *Er wurde kommen.

Furthermore, *werden* may not be nominalized (13) nor form imperatives (14), nor may it be preceded by other auxiliaries (15):

13. a. Um stark zu werden . . .

"In order to become strong . . ."

b. *Um kommen zu werden . . .

14. a. Werde stark!

"Become strong!"

b. *Werde kommen!

15. a. Er will stark werden.

"He wants to become strong."

b. *Er will kommen werden.

An example of Stage D items that are on the way proceeding towards the next stage of grammaticalization is provided by Mkhathswa (1991:79ff.) from Zulu, a Bantu language of South Africa. Zulu auxiliaries such as *-za-* Immediate Future, *-ya-* Remote Future, *-sa-* Progressive aspect, etc., overwhelmingly exhibit the properties of Stage D, although they also share some attributes with neighboring stages, as can be seen in Table 2.4.

Stage E. Stage E items are decategorialized to the extent that they tend to be perceived by grammarians as belonging to a category other than that of verbs. The verb loses its ability to be separately negated and to occur in

Table 2.4. Some Properties of Verbs and Auxiliaries in Zulu
(According to Mkhathswa 1991)

<i>Property</i>	<i>Verbs</i>	<i>Auxiliaries</i>
Word order: second position after subject agreement marker	+	+
Carrier of tense, aspect and mood markers	+	+
Carrier of negation morphology	+	+/-
Ability to take derivative extensions	+	-
Ability to take object prefixes	+	-

other positions in the clause. Since they have lost many of their verbal properties but have retained others, Stage E items are suggestive of “linguistic hybrids” that combine the characteristics of lexical verbs and grammatical markers. Typically during this stage, processes such as cliticization and erosion are likely to be triggered, with the effect that the verb loses in word status and phonological substance, and/or that the nominalizing and/or adverbial morphology on the complement is eroded. Note, however, that erosion may set in already at an early stage in one language but only at Stage F in another language. Languages differ considerably in their treatment of erosion (and so do linguists); so far, there is no detailed analysis of the exact correlation between erosion and other parameters of grammaticalization.

English modal verbs such as *can*, *may*, *should*, *would*, etc. are Stage E items in most of their uses, another example being provided by the Godié item *yì* (Marchese 1986:79–82). This West African Kru language has developed the verb *yì*, “come to,” into a potential/future marker (POT) on the basis of the form “X comes to Y” of the Location Schema. *yì* has retained a number of verbal properties, such as the ability to carry object clitics, or to occur in the (verbal) sentence-second position (Marchese 1986:82). Grammaticalization had in particular the following effects:

- a. *yì* expresses exclusively a grammatical concept.
 - b. It has lost its ability to inflect for aspect. As a full verb, it marks the aspectual distinction Factative versus Imperfective by means of, respectively, a low tone and a mid tone on the stem vowel, as in (16); as an auxiliary, however, it is invariable, as in (17a); hence (17b) is ungrammatical.
16. Godié (Kru, Niger-Congo; Marchese 1986:80–81)
- | | |
|-------------------------------------|---|
| ɔ̃ yì
he come:FACT
“He came.” | ɔ̃ yì
he come:IMP
“He is coming.” |
|-------------------------------------|---|
17. a. ɔ yì mɛ b. *ɔ yì mɛ
- | | |
|--------------------------------|----------------|
| he POT go
“He will/can go.” | he POT:FACT go |
|--------------------------------|----------------|
- c. While full verbs comparable to the lexical verb *yì* require their complement to be followed by the nominalizer (NOMIN) *kà*, as in (18a), the complement of *yì* has no (more) nominalizing marker, as can be seen in (18b). It is not entirely clear whether there was a nominalizer that was lost or else whether there was ever any at all.
18. a. ɔ ɓà budò kà b. ɔ yì budò
- | | |
|---|----------------------------------|
| he come.back: bathe NOMIN
FACT
“He came back from bathing.” | he POT bathe
“He will bathe.” |
|---|----------------------------------|
- d. Another characteristic of Stage E auxiliaries is that the verb phrase, that is, the constituent [verb–complement], has become a tight syntactic unit, to the extent that the complement may no longer be moved to other positions

in the clause. Thus, text-pragmatic rules such as moving a constituent to the sentence-initial position for topic or focus marking no longer apply to the complement. Godié has, for example, a rule of front-shifting complements for completive focus marking. Sentence (19a) represents the “normal” word order in this language, while (19b) is an example of a corresponding focus-marked sentence.

19. Godié (Kru, Niger-Congo; Marchese 1986:79–80)

- a. ɔ̌ ɓà sùkál dɪ kà
 she come.back:FACT rice cut NOMIN
 “She came back from cutting rice.”
- b. sùkál dɪ kà ɔ̌ ɓà
 rice cut NOMIN she come.back:FACT
 “It’s from cutting rice that she came back.”

This periphrastic construction has been grammaticalized to the extent that it is no longer possible to front-shift the complement, as can be seen in (20), where a focus-marked form (20b) corresponding to (19b) is not possible.

20. a. ɔ̌ yi sùkú m̩
 he POT school go
 “He will go to school.”
- b. *sùkú m̩ ɔ̌ yi

Further auxiliary characteristics of Godié yi are that it cannot be the main predicate, it cannot occur adjacent to another auxiliary, and that it cannot be nominalized nor occur in compound words (see Marchese 1986:82).

Stage F. At this stage, the verb loses virtually all remaining verbal properties and becomes firmly established morphologically and syntactically as a grammatical element and the complement is reinterpreted as the main verb. The verb shifts from clitic to affix status, and not seldom grammarians may disagree whether it should be described as a clitic/particle or as an affix. There remain, however, a number of morphosyntactic relics that are still indicative of the original schematic structure.

As an example of Stage F, we may cite the Swahili verbal prefix -ta-, a future tense marker that has lost most verbal properties, but a few relics still witness its verbal origin: -ta- is derived from the verb -taka, “want,” via the Volition Schema (“X wants Y”), as in (21a), while (21b) exemplifies its grammatical use as a tense inflection.

21. Swahili

- a. a- taka kazi. b. a- ta- ku- ja.
 3.SG-want work. 3.SG-FUT-INF-come
 “He wants a job.” “He’ll come.”

The infinitive marker ku- in (21b) has survived the grammaticalization of the Volition Schema and still has something of the nominal/infinitival

structure of the erstwhile complement. A second relic is illustrated by (22): While the verb *-taka, “want”, has been reduced to -ta- with its grammaticalization to a future tense marker, its full form has survived in one restricted context, namely in relative clauses:

22. a- taka- ye- ku- ja
 3.SG-FUT-REL.3.SG-INF-come
 “He who will come”

Stage G. This is the final stage where the verb is now purely a grammatical marker reduced typically to a monosyllable affix unable to carry distinctive tone or stress, and the complement has lost all traces of a nominalizing or adverbial morphology, being a full-fledged main verb in every respect. One might wish to call this the “orphaning stage,” to use a term proposed by Mathews (1978:3).

The Swahili negative Perfect (NOT-YET aspect) marker -ja-, which is derived from the lexical verb -ja, “come,” via the Motion Schema (“X comes to Y”), is an instance of a Stage G item: Swahili -ja- is exclusively a verbal prefix that differs from Stage F items such as -me- Perfect or -li- Past in that the main verb following it may not be preceded by the infinitive marker ku-:

23. Swahili
 h- a- ja- ja
 NEG-3.SG-NOT.YET-come
 “He hasn’t come yet.”

Considering the large diversity of approaches that have been applied to the study of auxiliaries, it is hard to relate these seven stages to orthodox taxonomies. It would seem, however, that roughly the following correspondences can be established: At Stages A and B, verbs are likely to be referred to as lexemes or full verbs, at Stage C as quasi-auxiliaries, semi-auxiliaries, or catenatives, while Stages D and E are most strongly associated with the notion of auxiliary, F with either auxiliary or affix status, and Stage G with that of affixes or inflections.

The seven stages distinguished here may not only be of help in locating a particular use of a given item; since most items associated with auxiliary status simultaneously combine more than one stage along the Verb-to-TAM chain, the classification of stages can also be employed to describe the nature of individual items. In the following, a few common types of items are described with reference to the kind of stages with which they are associated. Perhaps the most common type is one involving two main uses, where one is a main verb and the other a more grammatical use, as illustrated by the following examples:

A/B items. Among the many items of Modern English combining the uses of Stages A and B are, for example, *avoid*, as illustrated in (24).

24. A B
 Sam avoided Judy. Sam avoided getting caught.

A/C items. These are items occupying at least two positions of the Verb-to-TAM chain where one is a lexical Stage A and the other a Stage C use, as appears to be the case, for instance, with English items such as *keep* or *quit*, having the function of an aspectualizer as one of their uses:

- | | | |
|-----|--------------------|--------------------|
| 25. | A | C |
| | He kept the book. | He kept sneezing. |
| | She quit the team. | She quit worrying. |

A/D items. An instance of an A/D item has been presented: The German item *werden* combines the uses of a Stage A item (“become”) with those of a Stage D item (Future tense marker). Furthermore, some English items such as *use* or *have* in certain uses would seem to belong here, for example,

- | | | |
|-----|------------------------|------------------------------------|
| 26. | A | D |
| | He used all the money. | He used to collect his mail daily. |

Another type of item is finally associated with “auxiliary status,” that is, usually with Stage D or Stage E situations, but has retained some fossilized main verb (Stage A and/or B) uses. The English item *will* appears to belong here, as is suggested by the following example, which can be described as a (B)E item.

- | | | |
|-----|--------------------|---------------|
| 27. | B | E |
| | Do it as you will. | He will come. |

In cases where a given item is associated with different uses that are separated by several stages, as, for example, in (26) and (27), one can say that the verb and the auxiliary have split apart, to the extent that they are considered to be suggestive of separate linguistic units.

2.5 The Chain of Grammatical Functions

The preceding discussion must be viewed as a simplified account of Verb-to-TAM chains. Simplification relates first of all to the various stages proposed in Section 2.4: Since we are dealing with chains, and since chains are by definition continuous structures, setting up stages along these structures must remain an arbitrary and/or artificial endeavor to some extent. It is a common practice in linguistic descriptions to distinguish between two kinds of TAM markers where one is suggestive of a verbal origin while the verbal origin is no longer visible in the case of the other. In the West African Kru languages, for example, the former are called “auxiliaries” and the latter “particles” (Marchese 1986:167ff.) or “construction markers” (Welmers 1977:345). What distinguishes the two is the fact that the former are less grammaticalized than the latter; whether the two are in fact separated by a categorical boundary, however, remains to be demonstrated (see Claudi 1989:102ff.). Conceivably, some of these distinctions will turn out to be relevant, for example, in that Verb-to-TAM chains can be broken up into a series of focal units; for the time being,

however, they have to be taken simply as devices chosen for descriptive convenience. The same applies to what may be called the “endpoint” of a grammaticalization chain: Ideally, the endpoint is not an invariable grammatical marker occurring in a fixed position, as has been proposed, but rather zero, that is, a stage where the auxiliary concerned has been eroded to the extent that it ceases to exist physically.

Second, when discussing the development from concrete source propositions to grammatical categories, we were confined to but one part of the relevant process. Since grammaticalization is a continuous process that does not stop at a certain point, it is by no means concluded once a lexical/verbal meaning has been desemanticized to a grammatical function, rather that grammatical function is likely to give rise to new, more abstract grammatical functions.

Third, our interest in auxiliaries has focused on the notional domains of tense, aspect, and modality, and the impression conveyed was that these domains represent conceptual discontinuities that are independent of one another in that, for example, a given grammatical category has more in common with other categories belonging to the same domain than with categories belonging to other domains. Findings on grammaticalization suggest that the relation between these domains is more complex, as we will now see.

Once the development from a lexical/verbal to a grammatical concept of tense, aspect, or modality has been concluded, we enter a new phase of conceptual development, viz. one that leads from one grammatical function to other kinds of grammatical function. As in essentially all instances of grammaticalization, this development is unidirectional and therefore predictable within limits. Typically, it involves any of the following processes:

- a. A progressive tends to develop into a continuous, an imperfective, and a present tense marker (Anderson 1973:85; Comrie 1976:99–101; Bybee 1985:196; Marchese 1986; Bybee & Dahl 1989:56–57).
- b. A completive or a resultative marker may develop into a perfect marker (Bybee, Perkins, & Pagliuca (1992).
- c. A perfect tends to develop into a perfective or past marker (Anderson 1973:85; Harris 1982; Bybee & Dahl 1989:56), and a perfective marker may become a past marker (Claudi 1990; Bybee, Perkins & Pagliuca 1992).
- d. A past marker tends to develop into an irrealis or nonactuality marker (Fleischman 1989).
- e. A marker of agent-oriented (“deontic”) modality may develop into a future marker (Fleischman 1982a; Bybee, Pagliuca, & Perkins 1991).
- f. Prospective aspect markers are likely to develop into future tenses (Anderson 1973; Dik 1987:77).
- g. A future marker tends to assume the function of an epistemic modality marker (Bybee 1985:197; Bybee, Pagliuca, & Perkins 1991).

- h. A future marker also tends to assume the function of a speaker-oriented modality marker (Bybee, Pagliuca, & Perkins 1991).
- i. A modal marker of ability tends to give rise to a marker of root possibility, which again is likely to develop into a marker of epistemic possibility (Bybee, Perkins, & Pagliuca 1992, p. 25).

What these generalizations suggest is, first, that a given auxiliary construction, rather than referring to a specific grammatical function, is more likely to designate a range or chain of functions such as any of the following, or part thereof, where the symbol ">" signifies the direction of grammaticalization:

1. completive/resultative > perfect > perfective > past > irrealis
2. progressive > continuous > imperfective > present
3. agent-oriented modality > prospective > future > epistemic/speaker-oriented modality

Note that, once again, I am assuming that notions such as "perfect," "progressive," or "future" are used as convenient reference points whose cognitive/linguistic significance remains to be demonstrated in a given case. The English item *be . . . -ing*, for example, is considered by many grammarians to be a clear instance of a progressive category, yet Bybee and Dahl (1989:82–83) point out that it can be used to describe habitual situations within a limited time frame and, hence, may represent an intermediate stage in the transition from a progressive to an imperfective category; concerning the problem of defining the meaning of progressives, see also Binnick (1991:281ff.). What such observations suggest is that this item covers a certain spectrum of pragmatically defined uses along chain (2), and that this spectrum includes that of a progressive, but is not confined to it.

This relative degree of conceptual grammaticalization directly correlates with a corresponding degree of morphosyntactic grammaticalization. On the basis of the quantitative data presented by Dahl (1985), Bybee and Dahl (1989:56) observe, for example, that while perfect and progressive

Table 2.5. Periphrastic versus Bound Expressions
of Tense–aspect Categories
(According to Bybee & Dahl 1989:56)

	<i>Relative frequency of occurrence</i>	
	<i>Periphrastic expression</i>	<i>Bound expression</i>
Progressive	95%	
Perfect	88%	
Future	54%	46%
Past		73%
Perfective		85%
Imperfective		100%

usually have periphrastic expression, past, perfective, and imperfective usually have bound expression. The figures given by them are summarized in Table 2.5.

Second, these generalizations also suggest that the three domains we are mainly concerned with, namely tense, aspect, and modality, are interrelated in a systematic way; as the patterns of development just considered suggest, the relationship between these domains can be described with reference to the following more general scale constituting one possible channel of grammaticalization:

4. aspect/agent-oriented modality > tense > epistemic modality/speaker-oriented modality.

What this means with regard to our understanding of the relation between the three domains concerned may be illustrated with the following observation made by Bybee and Dahl:

[. . .] we do not have to concern ourselves with defining “tense” or “aspect” or the more recalcitrant “mood” as overarching categories, nor with deciding whether perfect is a tense or an aspect, or whether future is a tense or a mood. Rather the relevant entity for the study of grammatical meaning is the individual gram, which must be viewed as having inherent semantic substance reflecting the history of its development as much as the place it occupies in a synchronic system.

Bybee & Dahl 1989:97

2.6 On Defining Auxiliaries

On the basis of the taxonomic approaches alluded to in Chapter 1 and the observations made in Chapter 2, it would seem that not much is gained by defining “auxiliary” in terms of necessary and sufficient criteria: Such a definition would have to be either so general as to be largely vacuous or else to be so specific as to exclude many of the properties commonly associated with these items. It is not surprising, therefore, that in her monographic treatment of auxiliaries, Steele (1978:41) defines the category “AUX” as a language universal but admits that “an exhaustive definition of AUX is impossible in this paper” (see also Kaisse 1984:924–26).

One alternative would be to eliminate both the label and the notion “auxiliary” altogether from linguistic terminology, as has in fact been suggested by a number of proponents of the main-verb hypothesis (Section 1.2.2). This, however, would mean that we either ignore the peculiar structures to be found in language after language that would seem to cry out for some kind of generalization, or else that we push the problem to another component of language structure, for example, to that of the verb.

The preceding discussion may have shown that “auxiliary” is a convenient label to refer to a linguistic phenomenon for which category status of some kind or other has been claimed by different schools of linguistics.

Our analysis suggests, however, that the term might turn out to be dispensable given a more appropriate theory of language. Since such a theory is not available as yet, both the label and the concept commonly associated with it are retained here. Problems surrounding the definition of auxiliaries can be alleviated once we decide on a definition that takes the dynamics of linguistic development into consideration. For the purpose of the present work, such a definition could be phrased roughly as in (1):

1. An auxiliary is a linguistic item covering some range of uses along the Verb-to-TAM chain.

The notion “Verb-to-TAM chain” was discussed in some detail in Section 2.4. “Range of uses” may refer ideally to one single use, but so far I have not been able to identify an auxiliary that has one use only. Variation in use may relate to semantic criteria, like that of the English modals *can*, *must*, etc., having an agent-oriented (“deontic”) use in (2a) but an epistemic use in (2b), or it may relate to morphology, like that of the item *need* that occurs either with the agreement marker *-s* (3a) or without it (3b), or to phonology, like the item *has*, which may occur either in its full form, as in (4a), or in a reduced form, as in (4b). As we saw in the course of this chapter, variation as found in these examples is not arbitrary; rather it can be accounted for with reference to the overall structure of Verb-to-TAM chains, and to the parameters discussed in Section 2.4.1.

- | | |
|-------------------------------------|---------------------------------|
| 2. a. John <i>may</i> go. | b. That <i>may</i> be right. |
| John <i>must</i> leave immediately. | John <i>must</i> be crazy. |
| 3. a. He <i>needs</i> to go home. | b. She <i>need</i> not go home. |
| 4. a. He <i>has</i> left. | b. He's left. |

In the introductory chapter (Section 1.2.4) it was pointed out that the category “AUX” is claimed to be of universal status but that there are a number of different ways in which the term *universal category* has been used in the past. Among the four alternatives discussed there, (a) comes closest to the present understanding of the notion “universal category”: Since both the conceptual basis and the patterns of grammaticalization leading to auxiliation are similar across cultures and languages, I will assume that all languages have Verb-to-TAM chains, even though there is an enormous range of variation these chains exhibit both between different languages and within a given language.

Definition (1) requires us also to part with previous models of categorization, specifically with the classical model of discrete categorization, as we will see in Chapter 3.

2.7 Discussion

In the preceding paragraphs, some salient properties of the dynamics of auxiliation were discussed. In doing so, a number of phenomena had to be

ignored; thus, neither the vast range of diverse developments nor the effects these developments have on the overall structure of a given language were considered. In the present section, a few topics are discussed that are immediately relevant to a better understanding of the framework outlined above. First, the cross-linguistic relevance of the notion of grammaticalization chain is illustrated with reference to English and German modals. Second, it will be argued that there is at least one alternative kind of grammaticalization chain that has to be taken into consideration in order to understand the morphosyntax of tense and aspect categories, and finally we will be concerned with the question of how the framework proposed here relates to other approaches that have been proposed to account for the nature of auxiliaries.

2.7.1 On locating auxiliaries

Differences in the degree of grammaticalization a given auxiliary exhibits are not only a characteristic of a language, or of some historical stage in the development of that language, they frequently correlate with individual speakers or groups of speakers, where one individual or group accepts only the source form, another one both the source and the target form, and a third only the target form. The English lexeme *have*, for example, behaves like a main verb for some people, like an auxiliary for others, and like either a main verb or an auxiliary for many others (Pullum & Wilson 1977:954). Similar descriptions can be found in a number of works on languages world-wide. Tucker (1940:219), for example, has the following to say about the Central Sudanic Moru-Madi languages of the Nilo-Saharan family: "Many auxiliaries are formed from verbal roots which themselves may be used as independent verbs in other contexts. Some verbal roots may function as independent verbs in one language but only as auxiliary verbs in another."

Furthermore, the notion of auxiliation relates to a number of different uses. First, it is associated with a single lexical item, such as English *will*, which behaves like a main verb in (1),¹⁹ but like a grammatical marker of future tense in (2). Note that *will* has an optionally reduced form in (2), though not in (1) (see Section 2.2).

- | | | |
|-----------------------|----|-------------------|
| 1. Do it as you will! | | *Do it as you'll! |
| 2. He will come soon. | or | He'll come soon. |

Second, it relates to the behavior of all auxiliary elements within a given language or language variety. Auxiliaries differ considerably in their morphosyntactic structure from one language to another, as we will see in the following; but even within a given language, auxiliaries exhibit a wide range of functional and morphosyntactic variation, extending from free word at one end to inflectional affix at the other. An impression of the kind of variation is provided by Bolinger with reference to ten English items that he associates in some way or other with auxiliary status. These

Table 2.6 Degree of Auxiliariness of Ten English Items
(According to Bolinger 1980:297)

Parameter ^a	1	2	3	4	5	6	7	8	9
“Not-yet-auxiliary”									
Regret to									
Try to									+
Want to									+
Be going to							+	+	+
Have to							+	+	+
Be supposed to					+	+	+	+	+
Got to					+	+	+	+	+
Used to					+	+	+	+	+
Ought to		+	+	+	+	+	+	+	+
Should	+	+	+	+	+	+	+	+	+
“Fully established auxiliary”									

^aParameters: 1, bare infinitive complement; 2, subject inversion; 3, negative contraction; 4, tagging; 5, nonsubordination to a main verb; 6, defective conjugation; 7, VP deletion; 8, epistemic, aspectual, or modal meaning; 9, *to* or *have* contraction.

items and their phonological, morphological, and syntactic properties are listed in Table 2.6.²⁰

The third main kind of use of the term *auxiliary* relates to cross-linguistic regularities in the process of auxiliation. The notion of grammaticalization chain is relevant to all three uses. The English item *will*, for example, constitutes a chain that includes both lexical and grammatical uses, such as those exemplified in (1) and (2). At the same time, *will*, together with other auxiliaries, belongs to the overall auxiliation chain of English, which again is part of what we may loosely call the universal chain of auxiliation.

A number of authors have pointed out that auxiliaries in English are different from those in other languages in showing some idiosyncratic properties not found in other languages such as German, Dutch, or French (Calbert 1973:3). Auxiliaries in the Romance languages (Green 1987:256) or in German, for example, have been described as being more verblike than their English counterparts, and some (cf. Jenkins 1972:9–12; Steele et al. 1981) go so far as to argue that English and German modals are separated by a categorical boundary, the former belonging to the category AUX and the latter to that of Verb. German modals are said to differ from their English cognates, for example, in the following way (Steele et al. 1981:260–64; Abraham 1992):

- Modals such as *können*, “can,” or *müssen* “must,” etc. exhibit verbal inflections, for example, *ich kann*, “I can,” *du kannst*, “you can,” etc.²¹
- They may appear in nonfinite constructions, for example, *zu können*, *das Können*.

- c. They may iterate, as in the following example:
- 3. Weil Fritz kommen wollen konnte . . .
because Fritz come want could
"Because Fritz could (possibly) want to come . . ."
- d. They are not restricted to any fixed order with respect to each other or to the perfect auxiliary *haben*, "have."
- 4. Weil Fritz kommen können wollte . . . [cf. (3)]
"Because Fritz wanted to be able to come . . ."
- e. They may also occur in certain constructions without any other verb in the same clause,²² for example,
- 5. Hans kann keinen Handstand.
Hans can no handstand
"Hans can't do a handstand."
- f. Erosion or "auxiliary reduction" does not apply to the German cognates of English modals, for example,
- 6. Er will gehen. *Er'll gehen.
he wants.to go
"He wants to go."

The question that one might wish to raise is: Why are these properties taken by Steele et al. (1981:264) as well as a number of other authors to be diagnostic of a certain category? More important, however, these authors fail to mention that a number of the properties listed as characteristic of auxiliaries in Section 1.7 are shared by English and German, such as the following (cf. Helbig & Buscha 1988:105–27):

- i. Both English and German modals are employed for the expression of a restricted range of grammatical functions.
- ii. They form a closed set of entities.
- iii. They normally do not passivize.
- iv. They may not form imperatives.
- v. They typically require verb phrases, rather than noun phrases or adverbial phrases, as their complements.
- vi. In the presence of these modals, main verbs are used in a nonfinite (infinitival) form.
- vii. They lack a present tense third person singular inflection, which is *-s* in English and *-t* in German.
- viii. They do not take the infinitive marker (*to* and *zu*, respectively) to introduce the main verb.

Note that some of these properties are also shared by certain classes of items that are clearly not auxiliaries. For example, (iii) is typically associated with intransitive verbs, (iv) with stative and inchoative–stative verbs, and (viii) is shared by a number of German full verbs like *hören*, "hear," *sehen*, "see," *gehen*, "go," *kommen* "come," etc. Similarly, a number of full verbs in English do not take the infinitive marker *to*, such as verbs of

8. Von Hans wird gewollt, daß Anna zu Hause bleibt.
 by Hans is wanted that Anna at home stays
 "Hans is requested to leave Anna at home."

Thus, we may describe the structure of a given auxiliary or group of auxiliaries with reference to their respective location along the Verb-to-TAM chain, specifically with reference to the endpoints of this chain. As was claimed, this chain has both a synchronic and a diachronic dimension. We may illustrate this dual nature of grammaticalization chains with the following example. We saw in Section 2.4 that an auxiliary that historically develops from a transitive verb tends to undergo changes like the following on the way from full-fledged verb to invariable grammatical marker:

- a. It takes nonfinite verbs (in a nominalized/infinitival form) as complements;
- b. It loses the ability to take nominal complements;
- c. The ability to occur with markers of nominalization and/or nonfiniteness (e.g., gerundival or infinitival morphemes) tends to be lost;
- d. The auxiliary loses the ability to be governed by other auxiliaries;
- e. It loses other verbal properties such as being used in an imperative form or undergoing passivization;
- f. It also loses verbal properties such as the ability to inflect for tense, aspect, and/or modality.

These are exactly the kinds of historical process that affected English verbs on their way to becoming modal auxiliaries (cf. Lightfoot 1974; Steele et al. 1981:288), even if not all modals did in fact undergo all six processes. At the same time, however, (a) through (f) can also be understood as descriptive statements of English grammar, according to which the synchronic behavior of these auxiliaries is described with reference to the source of the Verb-to-TAM chain, which in this case consists of transitive verbs of modern English.

Similarly, the English item *be going to* behaves like a synchronic chain extending from Stage A uses (e.g., *John is going to town soon.*) to Stage D and even Stage E uses (*John's gonna go soon.*). At the same time, this chain is also suggestive of a diachronic process: *be going to* appears to have been essentially a Stage A item in Middle English, it turns up in Stage B uses in Early New English, as in (9), where in addition to "traveling to a place" it acquires the meaning "traveling to perform an action," and by 1844, if not earlier, it also has Stage C uses in that it can now co-occur with the verb *go* as its complement/main verb, as in (10) (see Pérez 1990 for details).

9. Letters to my friends, And I am going to deliver them (William Shakespeare, *Two Gentlemen of Verona*:iii, 1, 54)
10. He was full of promise, but of no performance. He was always, in a manner, going to go, and never going. (Charles Dickens, *The Life and Times of Martin Chuzzlewit*; Pérez 1990:58)

One way of dealing with this situation is to keep diachronic change and synchronic variation apart and to argue that there is a set of diachronic statements on the one hand, and a largely synonymous set of synchronic rules on the other, and leave it at that. According to an alternative account, one may argue that, instead of two distinct sets of statements, there is only one. Such a position has been suggested, for example, by Myhill:

Grammaticalization as a synchronic process has not been subjected to the sort of systematic study that grammaticalization as a diachronic process has, and so we know relatively little about it; however, the two processes represent two sides of the same coin, and we cannot understand grammaticalization without understanding both of them.

Myhill 1988a:352

Such a position may be described as being panchronic or *metachronic* in nature. The term *metachronic* in this case refers to an entity that is neither exclusively diachronic nor exclusively synchronic but has both a diachronic and a synchronic dimension (see Heine, Claudi, & Hünemeyer 1991, Chap. 9; Stolz 1990). Whether we decide to describe the structure of the auxiliaries concerned in terms of a synchronic or a diachronic framework can be said to be a matter of the *perspective* we adopt, rather than of the facts to be described. While an account in terms of a metachronic perspective does not eliminate the relevance of both synchronic and diachronic perspectives, it would seem to have a number of advantages in certain cases. First, it is more economical since we only need one set of descriptive statements rather than two. Second, and more important, it adds an explanatory parameter to the study of auxiliaries in that it helps us to understand why grammaticalization processes like those observed in the development of auxiliaries are simultaneously diachronic and synchronic in nature or, more precisely, why they have both diachronic and synchronic manifestations. We will return to this issue in Section 3.6.

2.7.2 An alternative chain

The processes described in Section 2.4.1 are characteristic of but one widespread kind of dynamism in the development of auxiliaries. For example, a process like cliticization need not affect the main verb, rather auxiliaries may be attached to some clausal constituent other than the main verb. In a number of West African languages, the auxiliary cliticizes on the subject pronoun rather than the main verb—with the effect that new paradigms of tense-marked pronouns have evolved. In Hausa, for example, the Motion Schema (see Section 2.1) has given rise to the development of a future tense category, whereby the verb *zâa*, “go,” has been grammaticalized as a future marker (*zâa-*, *zâ-*), which is attached to the subject pronoun, rather than the main verb, to form a new future tense paradigm, as can be seen in (1).

1. Hausa (Chadic, Afro-Asiatic family)

zàà ní	gídáá.	zá-ñ	zóó
go	1.SG home	FUT-1.SG	come
“I am going home.”		“I will come.”	

Alternatively, the auxiliary may retain its independent word status but turn into an adverblike item having a temporal, aspectual, or modal function. In Ewe, for example, the Serial Schema involving the verb *vɔ*, “end, be finished” has been grammaticalized to a completive aspect marker that, instead of cliticizing on the main verb, has joined the class of adverbs (Westermann 1907:98):

2. Ewe (Kwa, Niger-Congo)

wó-	mé-	ɣlɔ	nú	vɔ	háǵé	o
3.PL-NEG-	write	thing	TERM	yet	NEG	
“They have not yet finished writing”						

Furthermore, temporal, aspectual, or modal categories may have a genesis that is entirely different from the one described in this paper. One of the questions raised in Section 1.8 was: Why do auxiliaries need to have verbal properties? The answer is (redundantly): Because they are derived from verbs. However, while the schemas discussed in Section 2.1 provide the primary source for developing grammatical categories of tense, aspect, and modality, they are not the only source for these categories.

Mufwene (1991) observes that in Gullah there are a number of items contributing to the system of TAM marking. Most of them are described by him as verbs and, in their grammatical functions, also as auxiliaries; auxiliaries are defined by him as verbs that function syntactically as main verbs but are interpreted semantically as modifiers rather than as heads (Mufwene 1991:3, 13). There is, however, one TAM item in Gullah, namely the mood marker *fə*, which he excludes from the list of verbs/auxiliaries, and there are good reasons for doing so: *fə* does not have a verbal source; rather it is derived from the preposition *fə* (1991:9, 13). Thus, it is not surprising that *fə* does not exhibit the properties characteristic of items belonging to the Verb-to-TAM chain; rather it may be said to belong to some other chain that we may call loosely the Adposition-to-TAM chain. The starting point of the *fə* chain consists of uses as a purposive preposition and its endpoint of uses in predicative function as a modal marker of obligation; similar examples have been reported from languages in other parts of the world (cf. e.g., Claudi 1990 on the West African Mande languages).

Nevertheless, such examples may be considered to represent “exotic” cases: Instances of the Adposition-to-TAM chain are not frequently encountered in the languages of the world. A more common chain is provided by adverbial concepts that are added to the clause as locative, temporal, modal, or other adjuncts and are encoded typically as adverbs. One sub-type of this source involves a proposition roughly as sketched in (3), where the constituent *at a certain time* typically is a temporal adverb.

3. "X acts at a certain time"

This proposition is a relatively widespread source for future and past tense categories. Thus, future tense markers have been found to derive from adverbs meaning "next," "soon," "tomorrow," "quickly," "then, afterwards," or "actually," and past tense markers from adverbs meaning "yesterday," "the day before yesterday," or "in the past." Examples of such developments have been reported in particular from Nilotic languages (Heine & Reh 1984:120–21), Kru languages (Singler 1979:25; Marchese 1984; 1986), as well as from pidgin and creole languages (Sankoff & Laberge 1974:77; Bickerton 1981).

A second sub-type of this source involves locative, directional, and other adverbs as adjuncts that may develop either into verbal derivative morphemes or, less commonly, into markers of aspectual distinctions. Comrie (1976:88–94) provides examples from English (e.g., *drink up*), German (*aus-trinken*), Latin (*conficere*, "complete"), Hungarian, and, most of all, from Slavonic languages, which have developed perfective markers in this way.²³

Naturally, grammatical categories derived via this channel do not exhibit the properties of Verb-to-TAM chains; rather they are part of a different kind of grammaticalization chain that we propose to call the Adverb-to-TAM chain. The endpoints of this chain are described in Figure 2.7.

Markers of tense and aspect differ drastically in their word order behavior depending on whether they are part of a Verb-To-TAM or an Adverb-to-TAM chain. Since in canonical verb-final (SOV) languages, adverbs typically precede and auxiliaries follow the main verb, such markers are likely to appear in a pre-verbal position when being part of an Adverb-to-TAM chain, but in a post-verbal position in the case of a Verb-to-TAM chain. Conversely, in verb-initial (VSO) and most verb-medial (SVO) languages, Verb-to-TAM chains tend to give rise to pre-verbal and Adverb-to-TAM chains to post-verbal markers of tense and/or aspect.

A consideration of Adverb-to-TAM chains is outside the scope of the present monograph; brief descriptions of its internal structure have been

Domain	A	G
Semantics:	Locative, temporal, modal, etc. adverb	TAM marker
Syntax:	Freedom to occur in most positions in the clause	Fixed position
Morphology:	Free word	(Verbal) affix
Phonology:	Full form	Reduced (typically monosyllabic) form

Figure 2.7. Some properties of the endpoints of Adverb-to-TAM chains (A, starting point; G, endpoint).

volunteered by Sankoff and Laberge (1974:77), Marchese (1984:204–6; 1986), and Heine and Reh (1984:120–21); see also Comrie (1976:88ff.). As Givón (p.c.) points out, compared to Verb-to-TAM chains, Adverb-to-TAM chains are rarely encountered in the languages of the world.

2.7.3 Related approaches

The approach sketched in this chapter allows us to view certain phenomena in a new light. It enables us in particular to do away with the notional straightjacket of discrete linguistic evolution (cf. Lightfoot 1974; 1979) and of discrete categorization in cases where the latter fails and to account for such phenomena as continuity and chaining.

That auxiliation can be described in terms of linear morphosyntactic structures has been argued for by a number of researchers, most of them subscribing to approaches based on discrete categorization. Palmer (1979b:4–5), for example, describes English auxiliaries in terms of a gradient which has *be*, *have*, and *do* at one end and “catenatives” such as *want*, *propose*, and *like* at the other, with the modals and the “subject complementation verbs” *happen* and *seem* some way along this gradient.

The notion of gradience has been discussed in more detail by Bolinger (1980), who suggests that there is no borderline between main verbs and auxiliaries and that a number of English items such as *want to* (*wanna*) that in the past have been classified unambiguously as main verbs should be reconsidered with regard to their potential as auxiliaries: “If *wanna* as the least auxiliary-like member of the set can be seen as moving toward auxiliary status, then the entire set becomes peripherally auxiliary, and auxiliari-ness is graded” (Bolinger 1980:295). The way gradedness is to be conceived is illustrated by Bolinger by means of ten English lexical items whose relative degree of auxiliari-ness is described by him in terms of nine criteria (Bolinger 1980:297). These items differ from one another in their decreasing number of auxiliary properties: Whereas *should* behaves like an auxiliary with reference to all nine criteria, *regret to* meets none of these criteria (see Section 2.7.1 for more details). Bolinger argues against the use of the term “semi-auxiliaries,” since it implies a category that is amenable to its own special rules:

The historical fact needs to be seen in its synchronic frame: the forms are in transition, and exhibit all the refractoriness of their uncertain destiny: they are settled in some parts of their usage, unsettled in others. A supposed class of semi-auxiliaries is open to the same criticism that C.-J. Bailey has applied to a “Midland” dialect: there is no Midland, only a transition zone between Northern and Southern. The moment a verb is given an infinitive complement, that verb starts down the road of auxiliari-ness. It may make no more than a start or travel all the way. The difference between *I plan to go* and *I will go* is one of degree.

Bolinger 1980:297

A related view has also been expressed by some scholars working in the paradigm of generative grammar. Special terminological proposals have been made in an attempt to take care of the ambivalent nature of auxiliaries. Falk's (1984:498ff.) notion of "helping verb," which refers to entities combining certain verbal and auxiliary properties, being one example. Reis (1976:80) complains about the lack of "intermediate categories" that are available within this paradigm and expresses the need for a drastic revision of classical generative grammar to account for gradience and the transitional nature of auxiliary–main verb relations. Among those who view auxiliation as consisting of a spectrum of different but related entities, divergent views exist as to the extension of such a spectrum. Pullum and Wilson (1977), for example, argue that it includes verbal and "auxiliary" uses but excludes tense inflections. For Akmajian et al. (1979:53), on the other hand, the structure of the English AUX category ranges from the "auxiliary verbs" *have* and *be* to morphological elements of tense. An approach that exhibits some resemblance to the one proposed here is that of Pullum and Wilson (1977). With reference to the analysis of English lexemes such as *have* and *need*, for example, they observe that

- a. Both the main verb and the auxiliary uses of these lexemes should be interpreted as belonging to the same category, which in their terminology is a single "initial-structure lexical item," that is, a verb;
- b. The relationship between these uses and their respective distributional differences is to be handled by transformational operations; and
- c. A special rule, in their case a "Hopping rule," takes care of the derivation of the auxiliary use from the main verb use.

For example, the item *need* starts out as a main verb within the verb phrase, for example, in positive declarative sentences such as (1), and whenever it behaves like an auxiliary, as it does in negative or interrogative clauses such as (2), it may behave either like a main verb (2a) or it is optionally allowed to "hop" into the node "AUX" (2b) Pullum & Wilson 1977:754–55).

1. Bill needs to find a friend.
2. a. Does Bill need to write you a letter?
b. Need Bill write you a letter?

There are, however, a number of questions that Pullum and Wilson are unable to answer satisfactorily within their framework, namely, for example, why one and the same lexeme serves two different functions and is associated with two contrasting morphosyntactic structures, or why two contrasting structures (2a and 2b) have largely functionally equivalent meanings. They do not consider the facts:

- a. That the presence of these different uses is the result of a conceptual transfer whereby grammatical functions, in this case functions of the domains of tense, aspect, and modality, are expressed in terms of lexical concepts, in this case of verbs,

- b. That this process is unidirectional.
- c. That, since conceptual/semantic shift precedes morphosyntactic shift, (2a) has still the morphosyntax of a main verb although its semantics is that of an auxiliary, or
- d. The relationship between main verb uses and auxiliary uses is simultaneously a diachronic one, in that the latter is historically derived from the former, and a synchronic one, in that both are part of one grammaticalization chain and their difference can be described synchronically with reference to the general nature of grammaticalization chains (Heine 1992; see Section 2.3).

These observations suggest that there are a number of other problems associated with approaches like the one proposed by Pullum and Wilson (1977). For example, after noting that McCawley (1971) had assumed that tenses are verbs, Pullum and Wilson (1977:762–63) reject this position, first, because it might “raise controversies relating to the lexicalist hypothesis” and they “wish to avoid such controversies as far as possible.” Second, they state that an analysis “postulating a verb (PRES) which almost universally disappears or reduces to an affix in natural languages is, *a priori*, rather peculiar.”

Neither of these arguments would seem to be fully convincing in a general discussion on linguistic categorization. Leaving aside a number of languages, including pidgins and creoles (see Stolz 1987), which mark most of their tenses by forms that clearly qualify morphosyntactically as auxiliaries, and looking exclusively at the situation in English, we find items such as *will*, *shall*, *be going to*, or *have* that express semantic distinctions of tense in a number of their uses and are not genuinely different in their morphosyntactic behavior from other English items commonly referred to as auxiliaries. In fact, while they trace a categorial boundary between verbs and tense, Pullum and Wilson (1977:763) admit that *will* and *have* are definitely verbs.²⁴ Furthermore, if one decides to assign modality, but not tense, a verb status, then one has to be aware that not infrequently tense inflections are used for the expression of modality (cf. Fleischman 1989; Bybee & Dahl 1989; Bybee, Perkins, & Pagliuca, 1992; see Section 2.5). Thus, to trace a boundary between verbs/auxiliaries on the one hand and tense on the other, would seem to raise more problems than it solves.²⁵

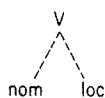
Such problems do not exist if auxiliation is described in terms of an overall grammaticalization chain that extends from concrete, referential concepts at one end to abstract, grammatical concepts at the other, and from main verbs at one end to inflectional morphemes at the other. Usually, a given linguistic item covers only a limited spectrum of this chain, and certain items—within a given language and at a specific time—may cover only the initial, more concrete/lexical spectrum while other items are confined to a more grammaticalized spectrum of the chain. Thus, while the English items *will* and *-ed* are located at quite distant points along the overall chain of auxiliation in English, nevertheless their respective seman-

tic, morphosyntactic, and morphophonemic behavior can be described with reference to that chain.

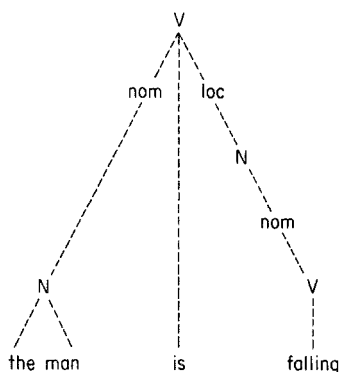
An approach that is more closely related to the framework proposed here is that of localism, for example, as expounded by Anderson (1973) in his essay concerning aspect. It is Anderson's merit to have drawn attention to the morphological parallelism between the expression of spatial location and the marking of certain temporal and aspectual distinctions in the verb and to have provided ample linguistic evidence for this parallelism (Anderson 1973:15–38). His study of tense and aspect is part of a more comprehensive thesis according to which "underlying grammatical functions are in general organized basically in terms of oppositions involving location and direction" (1973:10; see also Anderson 1971).

While it does not become entirely clear how the terms *in general* and *basically* are to be interpreted, the overall idea is that aspect and related grammatical functions can be accounted for in terms of a structure as sketched in (3), where "nom" stands for nominative and "loc" for locative, the latter being defined as a functional case category. Both "nom" and "loc" are dependent on "V," the verb. Thus, underlying the sentence *The man is falling* there is a structure as described in (4).

3.



4.



What localist theory has in common with the present framework are essentially the following claims:

- a. Grammatical functions do not constitute an autonomous conceptual domain; rather they are interrelated with, or "involve crucially" (Anderson 1973:5), other domains of conceptualization.
- b. A domain crucially involved is that of (physical) location or space, which serves as a structural template for (certain) grammatical expressions (cf. Lyons 1977:718).
- c. A theory of language has to account for the relationship existing between the domain of grammatical functions and that of space.

There are, however, a few areas where localist theory has not been entirely successful. First, it does not become absolutely clear what the relation between the domain of space and that of grammatical functions such as aspect is. On the one hand, the impression conveyed is that this relation is one involving (diachronic) development leading from spatial to grammatical functions. On the other hand there appears to be an assumption to the effect that there is no development involved since aspect categories are already spatial (cf. Brinton 1988:114). Second, it remains largely unclear why the morphosyntax of certain tense/aspect categories closely resembles that of locative structures, why such a relationship is less obvious in other cases, and why there are so many other tense/aspect categories that exhibit neither a notional nor a morphosyntactic relationship to locative categories. As has been argued for by Heine, Claudi, and Hünemeyer (1991), space is not the only source domain for the development of grammatical categories; concerning a catalogue of alternative source domains, see there. For example, among the source schemas isolated in Section 2.1, only two, (a) and (b), are clearly locative, while the majority are nonlocative. Thus, a more powerful theory of localism might have to take additional observations into consideration, such as the following:

- d. The relationship between grammar and space is based on a unidirectional process whereby grammatical functions are conceptualized in terms of spatial concepts. This process has both a synchronic and a diachronic dimension. With reference to the latter, when spatial concepts are employed to encode grammatical concepts, they gradually lose their locative meaning and morphosyntax.
- e. In cases where no relationship between grammatical and locative constructions can be established, there are two possible explanations: Either such a relationship exists historically but has been lost in the course of grammaticalization, or else there never was such a relationship because the relevant grammatical constructions are derived from conceptual domains other than that of space.

Another approach which in some ways resembles the one adopted here has been proposed by Ramat (1987), who distinguishes four diachronic stages in the process of auxiliization, which are:

- I. Full verbs. At this stage, verbs "have their full semantic meaning," the subject of the finite verb may be different from that of the nonfinite verb, and the clause complement may consist of a nominal instead of a nonfinite verb; that is, the nonfinite verb is not an obligatory constituent of the clause.
- II. Predicative construction. The nonfinite verb is a compulsory constituent of the clause.
- III. Periphrastic forms. The finite verb/auxiliary has no autonomous semantic content, it is now a marker for tense, aspect, and mood.
- IV. Agglutination. This is the final stage where the auxiliary develops into an affix, typically in some reduced form, which is no longer inflected for person.

Ramat's scenario captures a number of properties that are characteristic of the grammaticalization chain of auxiliation and resembles the one presented in Section 2.4.2. First, it describes a diachronic process leading from Stage I to Stage IV, and this process is relevant for understanding synchronic language structure. Second, the stages distinguished are not to be viewed as discrete, delineated entities, rather they "represent focal instances of the process between the two poles—a process which is continuously going on without breaks . . ." (Ramat 1987:12). Third, he discusses problems relating to a definition of auxiliaries such as the following: Which stretch along this continuum corresponds to the notion of an auxiliary? Where should the line between full verbs and auxiliaries, or between auxiliaries and affixal tense/aspect inflections be drawn?

There are, however, a few points where Ramat's interpretation would seem to require further analysis. One of them concerns the question as to what motivates the whole process in the first place. Second, according to Ramat's treatment, Stage I is characterized by both semantic and syntactic properties, Stage II only by syntactic, Stage III only by semantic, and Stage IV by morphological and phonetic properties. Since at Stage I we are dealing with the full lexical semantics of a verb and at Stage III with an entire loss of it, the question arises as to how the semantic shift between these two stages is to be conceived, that is, whether it proceeds straight from lexical meaning to grammatical function without any intermediate stages. Abraham (1990:204) observes, for example, that at least one additional stage is required between II and III to account for the transition from main verb to auxiliary tense semantics. Third, Ramat's claim that at Stage III, no "autonomous semantic meaning" is left, has to be taken with care in the light of observations made by Bybee and Pagliuca (1985), and Bybee, Pagliuca, and Perkins (1991), according to which part of the earlier meaning tends to survive even at a more advanced stage of grammaticalization. Finally, Ramat's scenario does not address the problem concerning semantic ambiguity and morphosyntactic and morphophonological variation that appears to be an inherent characteristic of auxiliation, discussed here in terms of the Overlap Model (Section 2.2).

A framework that is also in line with the one sketched here has been proposed in some way or other by a few other authors. Plank, for example, describes the development of the English modals as "a paradigm case of grammaticization, showing in an exemplary manner how more or less ordinary lexical items are appropriated for the grammatical system, with the linguistic forms involved being gradually adjusted to the functions that transparently motivate them" (Plank 1984:308), and Givón observes that most markers of tense, aspect, and modality (TAM) arise via the reanalysis of erstwhile main verbs in a gradual and protracted process, which he describes thus:

. . . at that initial point of this process the TAM marker-to-be is to all intents and purposes a main verb itself, semantically, syntactically and morphologically. As such, it is often referred to as an auxiliary verb. As the TAM

marker becomes more specialized as a grammatical morpheme, it gradually loses its original verbal meaning, syntax and morphology, becoming de-stressed and phonologically compressed/shortened. This eventually leads to full cliticization, as prefix or suffix on the verb.

Givón 1984:271

This process is described in more detail by Marchese (1986), for example, with reference to the development of future tense categories in the West African Kru languages, a development that involved the Motion and the Possession Schemas discussed in Section 2.1. The Motion Schema has either “come” or “go” as its predicate nucleus. Marchese remarks with regard to the latter:

If we consider the future auxiliary related to “go,” for example, we will see that in some languages the form has almost exclusively verbal characteristics, while in others the form has almost exclusively auxiliary characteristics. Thus, it becomes clear that verbs like “go” are on a kind of continuum, where they move away from their “verbal-ness” towards their new identity as auxiliaries.

Verb → AUX

According to the progress of the verb “go”, languages can be placed along the continuum:

Verb '—'—'—' → AUX

Godié Wobé Dewoin Krahn

It is important to note, however, that when a verb takes on auxiliary characteristics, the verb from which it is derived does not cease to exist. Thus, in languages like Krahn, there are two entities: *mu*, the motion verb meaning “go,” and *mu*, the auxiliary.

Marchese 1986:96

The development from verb to auxiliary, according to her (1986:269), is one of reanalysis leading to the emergence of a completely new grammatical category; concerning a discussion of the notion of reanalysis, see Section 3.5.

More recently, two other studies have become available that closely resemble the present one. One of them is that proposed by Kuteva (1991) within the framework of cognitive semantics. Her concern is with what she calls the “auxiliarization constraint,” that is, with cross-linguistic regularities in the development of auxiliaries. Within a sample of eleven languages belonging to three different families, she found that no more than 20 lexical verbs were employed to encode a total of 117 auxiliary constructions. Such a regularity, she argues, is due mainly to two factors, namely, first, that concrete, human concepts are employed to express abstract, nonhuman ones and, second, that auxiliaries are derived from verbal encodings of a limited number of kinesthetic image-schemas belonging to four conceptual domains, which are the physical, the temporal, the intra-subjective, and the inter-subjective domains (see Section 2.1). Like most previous authors, Kuteva’s interest is mainly with the structure of auxiliaries and their lexical sources rather than with propositional, event-schematic contents like the ones discussed in the preceding chapter.

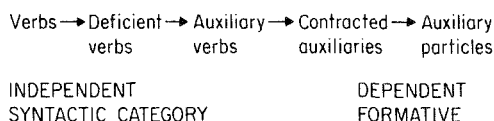


Figure 2.8. A continuum of auxiliation in Zulu (according to Mkhathshwa 1991).

The second study is based on a metaphoric interpretation of the auxiliation process in Zulu, a Bantu language of South Africa. The author, Mkhathshwa (1991), describes the structure of auxiliaries in terms of “a continuum where the one extreme pole represents prototypical verbs (sharing all the typical formal properties of verbs) and the other extreme pole represents prototypical auxiliary formatives (where most if not all typical verb properties have been lost).” The five stages distinguished by Mkhathshwa (1991:88) along this continuum are presented in Figure 2.8

2.8 Conclusion

The observations made in the course of Chapter 2 may help us to understand why previous authors have found it hard to produce a watertight definition of auxiliaries and why so many questions on the structure of these elements have remained unanswered. We are now in a position to deal with the questions raised in the introductory chapter (Section 1.8): When talking about auxiliaries, we refer to one particular outcome of a cognitive process whereby concrete, schematic contents are employed for the expression of abstract grammatical concepts. The major linguistic result of this process can be seen in the emergence of Verb-to-TAM chains having a concrete, lexical structure at one end and an extremely grammaticalized structure at the other, roughly as sketched in Figure 2.9.

This means on the one hand that an auxiliary is no longer a full verb but not yet a grammatical inflection either, and it is likely to exhibit properties that are characteristic of the intermediate stages between main verb and inflectional form, such as the ones listed in the introductory chapter (Section 1.7):

- a. It is part of a closed set of entities used to express notions such as tense, aspect, modality, etc.
- b. While having a grammatical function, its morphosyntax is verbal to some extent;
- c. Since it is historically the main verb while the actual main verb is historically its complement, it may be marked for person, number, negation, etc., while the actual main verb occurs in an invariable form;
- d. As a result of decategorialization (see Section 2.4.1), it occupies a fixed place in the clause and exhibits a reduced verbal behavior; for example, it may only associate with a restricted spectrum of verbal inflections, and it may lack the ability to occur in nonfinite forms, to be passivized, or to form imperatives;
- e. In view of its erstwhile main verb status, it also exhibits the word order

Domain	Starting point	Endpoint
Semantics:	Full verbal meaning	Grammatical function
Syntax:	High degree of variability	Fixed position
Morphology:	Inflected for TAM, person, number, negation, etc.;	Invariable element
	Free word	Affix
Phonology:	Full form	Reduced (typically monosyllabic) form

Figure 2.9. Some properties of the endpoints of Verb-to-TAM chains.

characteristics described by Greenberg (1963:67) and Steele (1978), in that it occupies that position in the clause that was normally assigned to main verbs at the time when the grammaticalization process started;

- f. As a result of erosion (see Section 2.4.1), it may have a phonologically reduced form and it may be unable to carry distinctive stress or tone;
- g. Being derived from a propositional structure, it may be part of a discontinuous marker that also includes elements that can be traced back to a nominalizing and/or adverbial morphology.

On the other hand, in accordance with the Overlap Model (Section 2.2) the auxiliary exhibits the variable behavior of grammaticalization chains, which accounts for much of its “amphibian nature” or “twin rôle” (Abraham 1990:201) and means in particular that

- h. It has at least two different uses, one of which is a lexical and the other a grammatical one, or one shows a full and the other a reduced verbal morphosyntax, or one has a full and the other a phonologically reduced form, etc., and that
- i. It may be associated with two different meanings corresponding to one form, or two different forms expressing one and the same meaning.

The way auxiliation has been described in the past was determined to a large extent by the perspective adopted by the respective authors vis-à-vis Verb-to-TAM chains. When viewed from the perspective of the starting point, auxiliaries tended to be described as decategorized or “defective” forms of verbs; when viewed from the perspective of the endpoint, however, auxiliaries were likely to be described as grammatical markers exhibiting some peculiar verbal properties.

The main purpose of Chapter 2 was to provide a new approach for dealing with auxiliation. As we saw in Section 2.7.3, this approach is not entirely new: A number of previous authors have drawn attention to factors like the effect of cognitive forces or the existence of chainlike linguistic structures. What is perhaps new about the framework proposed here is that it demonstrates that these factors are interrelated and necessarily present to produce the peculiar kinds of structure that auxiliaries exhibit.

3

Some Basic Issues

Aber die Grammatik ist eine Botaniskapsel, und die Sprache ist ein endloses grünes Land von Gewächsen.

Voßler 1905:50

In the preceding chapters, a framework for understanding the nature of auxiliary constructions, at least of some salient kinds of auxiliary construction, was presented. For this purpose, a number of theoretical notions were introduced. While most of them have been discussed in the current literature on grammaticalization (see especially Traugott & Heine 1991; Heine, Claudi, & Hünemeyer 1991), there exists disagreement as to their relevance and their exact meaning. Some of these notions are now looked at in more detail in order to provide a better understanding of them, but also with a view to illustrating the kinds of problem that are still associated with them. In the present chapter we will be concerned with problems that are not confined to auxiliaries; rather we will look at some more general problems that concern the semantic, syntactic, and morphological development of linguistic symbols.

3.1 Conceptual Shift

One of the most controversial issues concerns the nature of the conceptual shift taking place in the course of grammaticalization. We are concerned here specifically with the question as to what happens when some concrete propositional content is employed to express abstract functions of tense, aspect, and modality. For example, what has the concept of physical motion expressed by (1) in common with the grammatical function the same expression conveys in (2) or, to put it another way: What does the meaning of the auxiliary have in common with that of the main verb from which it is derived?

1. Suzanne *is going to* town.
2. Suzanne *is going to* wake up in a minute.

This question has two aspects, and I will deal with each of them in turn. The first relates to the fate of the conceptual content on its way from a concrete, lexical to an abstract, grammatical entity (Section 3.1.1), while the second aspect concerns the nature of the process involved (Section 3.1.2).

3.1.1 The content

According to the most prominent view expressed by students of grammaticalization, the process leading from the meaning that *is going to* has in (1) to the one it has in (2) entails a loss of conceptual or semantic content, whereby its lexical semantics is “bleached out” and only its grammatical content survives, as is apparent in statements like the following:

Restriction of the semantic range of a word may lead to a complete loss of lexical meaning. The inflectional suffixes of agglutinative languages are often independent words that have been grammaticalized.

Anttila 1989:149

This view is referred to by Heine, Claudi, and Hünemeyer (1991) as the *bleaching model*; it is represented schematically in (3), where the symbols “a” and “b” refer to conceptual attributes of the entities undergoing grammaticalization: “a” stands for that part of semantic content that is “bleached out,” while “b” is retained in the process.

3. $ab > b$

Adherents of the bleaching model argue in fact that all instances of grammaticalization can be described in terms of (3). This model has been described under such labels such as “bleaching,” “desemanticization,” “semantic impoverishment,” “generalization of semantic content” (Bybee & Pagliuca 1985), “abstraction,” “decay,” etc. (see Heine, Claudi, & Hünemeyer 1991); Willett (1988:80) refers to it as the *containment hypothesis*. He discusses this term with reference to Givón’s (1973) view according to which the time-axis arrangement of the presuppositions and implications accompanying certain verbs (e.g., “go” or “come”) are the “very embryo of our tense system” (Givón 1973:921).

The bleaching model has been described on the one hand as involving a loss of concrete semantic features and a reduction to an abstract semantic nucleus, the end-product of this process being one where the relevant item signifies little more than a kind of grammatical relation or an abstract image schema (Lehmann 1982:129). On the other hand, it has been viewed as leading to a generalization of semantic content, a process that has the effect that the morpheme concerned is emptied of its semantic specificities and hence has a more general distribution since it can be used

in more contexts (Bybee & Pagliuca 1985:63). Two examples may illustrate what happens, or is assumed to happen in the process of bleaching. We observed in Section 2.5 that one of the semantic developments that perfect markers frequently experience is that they are grammaticalized to either perfective or past tense markers. Now, when describing the development from verbal aspect to tense categories, Dik (1987:77) presents the following case to describe the difference between the Past (4) and the Present Perfect (5) in English:

4. John kissed Mary
 "At the moment of speaking it is stated that
 a. the State of Affairs 'John kiss Mary' took place before the moment of speaking"
5. John has kissed Mary
 "At the moment of speaking it is stated that
 a. John is such at the moment of speaking that
 b. the State of Affairs 'John kiss Mary' took place before the moment of speaking"

When element (a) in (5) is dropped, then (4) and (5) are semantically identical. This suggests that the Perfect is semantically more complex than the simple Past, and that the development from perfect to past tense, which can be observed in many languages world-wide, is one of what Dik calls "semantic simplification."²⁶ In a similar way, Dik (loc. cit.) argues that semantic simplification (or bleaching, or desemanticization) leads to the reinterpretation of progressive aspects as simple present tenses, and of (immediate) prospective aspects as future tenses.

The second example concerns the domain of modality. Bybee (1988) observes that in the development of the English auxiliary *can* we witness what she calls "semantic generalization"—a process going through three stages (see also Bybee, Perkins & Pagliuca 1992:16). Thus, for the completion of the main predicate situation, *can* predicates that

- I. mental enabling conditions exist in the agent,
- II. enabling conditions exist in the agent,
- III. enabling conditions exist.

Semantic generalization means that specific semantic features are lost, namely the feature [mental] at Stage II and [in the agent] at Stage III, whereby the use of *can* is extended from mental to physical ability and, hence, to ability in general, at Stage II, and from ability to root possibility at Stage III.

Note that the terms *bleaching* and *desemanticization* have both been used in a number of different ways and, accordingly, the notion of a bleaching model may apply to quite divergent phenomena. While in some works, including the present one, these two terms are taken to refer to any kind of semantic development in grammaticalization, their use is restricted to one particular part of this process in other works. For Heine and Reh

(1984), for example, desemanticization describes the initial stage of grammaticalization when a lexical item loses its lexical meaning, while Greenberg (1991) uses this term with reference to the last stages of grammaticalization when a given item is emptied of any semantic content or function it may have had. Similarly, the term *bleaching* is associated by some authors with the loss of lexical semantics, while for some it is confined to the later stages of grammaticalization, for example, when an erstwhile main verb like English *do* turns into a dummy auxiliary (Traugott 1988:407).

If indeed it provides a correct account of grammaticalization (see the following), then the bleaching model would allow us to predict what happens in grammaticalization, namely that the original meaning of a grammatical morpheme determines the particular range of uses that morpheme will have later in its history (Bybee & Pagliuca 1987:9). However, a number of students who have propagated the bleaching model in some form or other have also pointed out that grammaticalization cannot be reduced to such phenomena as “simplification,” “shrinkage,” or “decay,” etc., rather that there is something else involved as well. In fact, in many cases it turns out hard, or even impossible, to trace the content of grammatical categories entirely back to their lexical, or less grammatical, source. The following would seem to be examples of such instances, which may be viewed as a challenge to this model:

- a. Lichtenberk (1991) describes a number of grammatical functions that the verb “come” has assumed in Oceanic languages. In Vangunu, for example, the verb *mai*, “come,” has acquired the functions of a venitive, an ingressive/resultative marker (“reaching a new state”), a marker of relative closeness to the point of reference, and of marking future time. Lichtenberk comments on this situation in the following way:

There are no properties exclusively shared by the four functions; the only thing that unites them is their ultimate origin. The functions form a network where the grammatical functions are related to each other only indirectly, via the meaning “come” . . .

Lichtenberk 1991:35

The verb “come” has in fact undergone a wide range of grammaticalizations in the languages of the world; it has developed, for example, into

- A marker of future tense (Bybee, Pagliuca, & Perkins 1991);
- A marker of near past tense (e.g., French *venir de* “come from”);
- A venitive derivative extension (Heine & Reh 1984; Lichtenberk 1991);
- An ingressive/resultative marker (see preceding);
- A marker of relative closeness to the point of reference (see preceding);
- A marker of motion away from point of reference (Lichtenberk 1991);
- An agent marker of passive constructions (Lichtenberk 1991);
- A proximal (deictic) demonstrative (Frajzyngier 1987a).

In some cases it is possible to account for such divergent lines of grammaticalization. For example, whereas future tenses are likely to be derived from the goal orientation of “come” (“come to”), near past tenses probably always derive from its source orientation (“come from”). On the whole, however, it would seem hard to find a common denominator to all these different uses of “come.”

- b. Conversely, future tense markers may develop from a wide range of different verbal sources (see Bybee, Pagliuca, & Perkins 1991). Some languages derive future markers from verbs meaning “go” (English, Spanish, etc.), others from verbs meaning “come,” others again from “become” (German), “have” (Vulgar Latin) or “want” (English, Swahili), others again from temporal adverbs (Kru languages, Bari). Again, it would be difficult to find a common semantic denominator or core meaning to all these different sources (cf. Lehmann 1987:221). Even the observation made by Bybee and Pagliuca (1985:76), according to which futures developing from different sources will be slightly different from one another semantically because they will not fully lose all traces of their original lexical meaning, does not invalidate this point. For example, there appears to be agreement among grammarians to the effect that, in spite of their different verbal sources and their contrasting functions in many contexts, the English Future markers *shall/will* and *be going to* are synonymous in some contexts, as is suggested by statements like the following: “In most cases there is no demonstrable difference between *will/shall* and BE GOING, though many scholars have looked without success for one . . .” (Palmer (1974:163); see also Binnick (1971, 1972).

A distinction that appears to be of interest in this connection is that made by Dahl (1985:9–11) between “primary meaning,” “secondary meaning,” and “secondary foci.” While the primary meaning relates to the most prototypical exemplars of a given category, secondary meanings, which are also referred to as “weakened primary meanings,” are said to be represented by a subset of the prototype; that is, secondary meanings possess some of the prototypical properties but lack others. Secondary foci involve polysemy and arise via the conventionalization of implicatures; in addition to prototypical properties, they also have properties that are *not* present in the original prototype. While secondary meanings can be defined in terms of the bleaching model, secondary foci are outside the scope of this model: They require a different kind of model, one that is called the *loss-and-gain model* by Heine, Claudi, and Hünemeyer (1991). This model can be presented schematically as in (7).

7. $ab > bc$

The loss-and-gain model is more difficult to characterize, essentially because there exist different views as to how the “gains” are to be defined.

Note that there is a possible source of confusion when it comes to the question as to what constitutes a gain or enrichment in grammaticaliza-

tion. For example, when a phrase such as *be going to* is grammaticalized to a tense category, then this can be interpreted as an instance of semantic extension and, hence, of *enrichment*, since apart from its verbal meaning, the phrase now has a tense function in addition. This, however, is not the kind of gains or “enrichment” I have in mind here. Rather, when talking of losses and gains in grammaticalization, then we are comparing the source concept, in this case a verb of motion, with the target concept of future tense, and we are trying to establish whether the latter is an impoverished or bleached out version of the former (in accordance with the bleaching model), or else whether the transfer from a verbal to grammatical meaning might not entail some gains as well.

That grammaticalization may involve either losses (= “weakening of lexical meaning”) or gains (= “semantic strengthening”), or even both, has been argued for by Susan Herring. With reference to Traugott and König’s (1991) notion of pragmatic strengthening, she notes:

It has also been claimed that grammaticalization involves *semantic bleaching*, or weakening of lexical meaning, and that this process, too, is unidirectional. The validity of this claim is, however, far less evident than that for increasing abstraction, since not all meaning change necessarily involves bleaching, and in numerous instances, as is demonstrated by Traugott and König [. . .], the exact opposite process, that of semantic *strengthening*, may also take place. A more comprehensive view would seem to be that weakening and strengthening are independent processes, either or both of which may potentially be a factor in grammaticalization in any given instance.

Herring 1991:253–54

One of the first scholars to have pointed out that grammaticalization cannot be reduced to an impoverishment process was in fact Elizabeth Traugott (1980), who observes that while this process involves a shift from primarily referential to less referential meanings, it also leads to *more pragmatic* meanings. This observation in itself does not necessarily constitute a challenge to the bleaching model as Traugott (1980:47) equates “more pragmatic meaning” with “more abstract meaning,” and in many works on the subject, the shift from concrete to abstract meaning has been adduced as the prime evidence in favor of the bleaching model.

In addition, however, Traugott observes that this process is not confined to losses: In the process of grammaticalization, markers acquire not only syntactic characteristics that distinguish them from nouns, verbs, etc., but they also acquire meaning characteristics “that pertain less to the world being talked about and more to the speaker’s organization of that world in the act of speaking” (Traugott 1980:47). In her account of the development from agent-oriented (deontic) to epistemic meanings, Traugott concludes that “the development of epistemic and evidential meanings increases coding of speaker informativeness about his or her attitude. There may be weakening of the semantics of deontics, but there is strengthening of focus on knowledge, belief, and the speaker’s attitude toward the prop-

osition" (Traugott 1989:49). This view would seem to be immediately related to the version of the loss-and-gain model as proposed by Eve Sweetser. In her discussion of the grammaticalization of verbs meaning "go" to future markers, she states:

The claim, then, is that a topologically structured image schema [. . .] is abstractable from *go*, and coherently mappable onto the domain of futurity with preservation of the topology. In this mapping, we lose the sense of physical motion (together with all its likely background inferences). We gain, however, a new meaning of future prediction or intention—together with *its* likely background inferences. We thus cannot be said to have merely "lost" meaning; we have, rather, exchanged the embedding of this image-schema in a concrete, spatial domain of meaning for its embedding in a more abstract and possibly more subjective domain.

Sweetser 1988:392.

Such examples would seem to suggest that, given the right context, items undergoing grammaticalization may acquire new semantic properties that are not contained in their lexical source, that is, that the pragmatic factor of context plays a crucial rôle in the process of grammaticalization. Apart from the two models just outlined, we have to distinguish a third one. The *implicature model*, as I will call it, rests on the assumption that in the course of grammaticalization, the entire conceptual substance may be eliminated in favor of a completely new conceptual structure. This model may be viewed as an extension of the loss-and-gain model [see (7)]; its structure is sketched in (12).

12. $ab > bc > cd$

What is perhaps most noteworthy about this model is that there are development stages that do not have any attributes in common, like the first one (ab) and the last one (cd) in (12).

The term *implicature model* or *implicature hypothesis* is adopted from Willett (1988:80), who attributes it to Dahl (1985). According to this model, a predominant mechanism for creating secondary, grammatical, meanings is the conventionalization of implicatures or invited inferences. Such inferences and, accordingly, the secondary meanings arising through their conventionalization, are not necessarily contained in the original meaning. With each new inference that is conventionalized, part of the earlier meaning gets lost, until the original meaning (ab) disappears entirely and only the new meaning (cd) remains.

Note that these three models are not in contradiction to one another; rather each perspectivizes a different aspect of the process concerned. The bleaching model highlights the fact that the process involves losses, especially losses in lexical semantics, while it ignores the remainder of the process. The loss-and-gain model, on the other hand, emphasizes that losses are compensated for by gains, such as function-specific properties associated with the target domain, for example, that of tense, aspect, and modality. The implicature model goes one step further in claiming that the

original concept (ab) may entirely disappear in favor of a new concept (cd). What distinguishes these models essentially is their relative degree of inclusiveness: As can be seen in (13), which is a summary of (3), (7), and (12), the bleaching model is contained in the loss-and-gain model, which again is contained in the implicature model.

- | | |
|--------------|---------------------|
| 13. ab > b | Bleaching model |
| ab > bc | Loss-and-gain model |
| ab > bc > cd | Implicature model. |

While all three models are relevant for understanding the development from concrete propositions to abstract markers of tense, aspect, and modality, there are a couple of reasons why, of all these models, it is the bleaching model that has most often been drawn upon by students of grammaticalization. One reason has to do with isomorphism in linguistic coding. As we will see in more detail in Section 3.3, the development from concrete/lexical verbs to grammatical markers of tense or aspect correlates with an increasing reduction in the amount of morphological and phonetic expenditure employed for the expression of the relevant contents. Assuming that there is in fact some isomorphic relation between form and meaning, as has been argued for in particular by Lehmann (1974) and Givón (forthc.; see Section 3.3), this would suggest that, with the decrease of morphological and phonetic substance, the size of semantic substance is also reduced.

The second reason has to do with the overall semantic development in grammaticalization, which has been described as one leading from lexical semantics to grammatical function, and eventually to the entire loss of meaning (Lehmann 1982; Heine & Reh 1984). Considering the two endpoints of this evolution, which are marked by a full semantics at the initial stage and by zero at the final stage, the most obvious conclusion would be that the whole evolution involves a constant shrinkage of meaning, that is, that the semantic content of grammatical categories of tense, aspect, and modality is in fact poorer than that of the source schemas that gave rise to them.

It is hoped, however, that the discussion has made it clear that the bleaching model is too narrow to account for all the facts to be described, and that only the implicature model is broad enough to be empirically adequate and to serve as a basis for a theory of grammaticalization.

3.1.2 The process

In the introduction to this section, the question was raised as to what the concept of physical motion expressed by *be going to* in example (1) has in common with the grammatical function of future tense expressed by the same phrase in (2). From a different perspective, we may rephrase this question in the following way: How is the process to be defined that is responsible for the conceptual shift from physical motion to grammatical

function? Some possible answers have been volunteered in the preceding paragraph (Section 3.1.1) with reference to such notions as desemanticization, image-schema preservation, and the like. Most of the models sketched there to understand this process relate to either of two factors: metaphor or context-induced reinterpretation.

That the development of auxiliaries in particular and of grammatical categories in general involves metaphorical transfer has been claimed by a number of students of grammaticalization (see especially Claudi & Heine 1986; Sweetser 1990; Heine, Claudi, & Hünemeyer 1991; Mkhatswa 1991; Stolz 1991b; see also Bybee & Pagliuca 1985:73). There are in fact good reasons to argue that the shift of *be going to* from a concrete/lexical to an abstract/grammatical meaning has a metaphorical base. First, it is concerned with understanding one kind of thing in terms of another (Lakoff & Johnson 1980:5; Traugott 1989:49). Second, it involves a transfer from the "real world," the world of referential entities and kinetic activities, to the world of discourse, that is, to entities that have their existence in the act of speaking or, for example, with reference to the development of modal auxiliaries, a transfer from the sociophysical world to the world of reason and belief (Sweetser 1984:24). Thus, we are dealing with a transfer from one domain of human conceptualization to another. Third, that this transfer is in fact metaphoric in nature can also be derived from the fact that our *be going to* example meets the criteria commonly applied to define metaphor. For example, if metaphor is a statement that, if taken literally, is false, then this does apply as well to our example: While in the sentence *Suzanne is going to town* the phrase *is going to* has its "literal sense," it may be said to have a transferred sense when used in sentences like *Suzanne is going to wake up in a minute* where the "literal sense" is ruled out. Note, however, that being "literally false" is an important but not a sufficient criterion for an expression to be classified as a metaphor; for further evidence on the metaphorical nature of conceptual shift in grammaticalization, see Heine, Claudi, & Hünemeyer (1991).

Essentially the same kind of metaphorical transfer can be observed in other instances of grammaticalization: They involve a transfer from one cognitive domain to another, with the effect that, from a certain stage onwards, an expression undergoing this shift becomes false or meaningless if taken literally, that is, if interpreted as designating its original meaning. A number of such source domains and their corresponding target domains are discussed in Heine, Claudi, and Hünemeyer (1991); in the case of auxiliaries we are dealing with a source domain that is characterized by the content of the event schemas listed in Section 2.1: This domain is suggestive of a typically human world, where people are located somewhere, move, act, desire things, own things, etc. The target domain on the other hand is suggestive of a more abstract world of discourse functions, specifically of functions relating to the relative time, the temporal contours, and the truth value of events presented in linguistic discourse. It goes without saying that we are dealing here exclusively with one specific kind of meta-

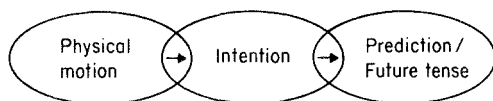


Figure 3.1. A simplified conceptual chain of *be going to*.

phorical transfer, one that has been described as “emerging metaphor” (Heine, Claudi, & Hünemeyer 1991:60–62).

There is, however, at least one problem with this metaphorical model. This problem concerns the central theme of this work, viz. the continuous nature of grammaticalization, which is responsible, for example, for what has been described in Section 2.4 as the Verb-to-TAM chain. Metaphor is commonly assumed to involve a discrete “jump” from one domain to another—a process that is hard to reconcile with the gradient nature of grammaticalization chains. In fact, that in the case of *be going to* the shift from physical motion to grammatical function proceeded in a chainlike manner is suggested on the one hand by historical evidence: This shift extended over several centuries and involved various kinds of overlapping function (Pérez 1990). On the other hand, it is also suggested by the present use patterns of this item. Thus, both diachronically and synchronically there is at least one intermediate function, namely that of intention. Historically, the intention sense may have existed for several centuries while that of prediction/future is a very late sense (Pérez 1990:58). A chain of the major shifts undergone by the *be going to* construction is presented in Figure 3.1. Note that this chain provides a simplified description of the actual situation, it ignores additional functions such as its proximative (“be about to”) or speaker-oriented (“I order you to”) uses (cf. Coates 1983:198; Bybee, Perkins, & Pagliuca, 1992).

That conceptual shift in the process of grammaticalization is in fact chainlike and continuous, as has been demonstrated in Chapter 2, especially with reference to the Overlap Model (Section 2.2), is due to the particular circumstances giving rise to new grammatical meanings: Such meanings are derived from existing meanings on the one hand via context extension (Aijmer 1985) and on the other hand through the conventionalization of invited inferences or conversational implicatures (Traugott & König 1991). This overall process is called context-induced reinterpretation by Heine, Claudi, and Hünemeyer (1991, Chapter 3) because it is specific contexts that invite new inferences and ultimately lead to the emergence of grammatical meanings.

To summarize, in order to account for the conceptual shift of *be going to* from concrete/lexical to abstract/grammatical meaning, we have two main models at our disposal that are seemingly mutually exclusive: one that rests on a metaphorical interpretation of the process and may therefore be called in short the *metaphor model*, and another relying on context-induced reinterpretation, let us call it the *context model*. While in the past scholars have argued in favor of either one or the other, more recent

investigations suggest that both models are simultaneously required to understand the process concerned.

There are, however, two contrasting positions with regard to the rôle these models should play in a theory of grammaticalization. On the one hand, there is the position of Traugott (1989), Traugott and König (1991), and of Bybee, Perkins, & Pagliuca (1992) according to which there are different kinds of grammaticalization that have to be distinguished, and while some kinds are handled best in terms of the metaphor model, others have to be accounted for in terms of the context model. Among these authors again, there are differing views as to where exactly these models apply. While all agree that the metaphor model applies in the case of concrete/lexical structures and the context model in the case of more strongly grammaticalized structures, disagreement exists as to where the boundary between the two is to be located. For Traugott (1989) and Traugott and König (1991), the transfer from concrete source schemas such as the ones discussed in Chapter 2 to auxiliary functions is metaphorically structured. The examples provided by Traugott (1989:207) involve such developments as that from GO to future, from COME to perfect, or from BE AT/IN to progressive, hence they relate to the Motion and the Location Schemas, respectively. The process concerned is described by Traugott as one involving "Spatio-temporal metaphors." The transfer from agent-oriented (deontic) to epistemic meanings, however, is not: "But the shift to epistemics of conclusion, belief, knowledge, hearsay, hypothetical conditionality, and so forth has little of the analogical mapping from one conceptual domain onto another that is characteristic of metaphor" (Traugott 1989:50). Sweetser (1982) and Heine, Claudi, and Hünemeyer (1991:175–78) on the other hand have demonstrated that the conceptual shift from the agent-oriented to the epistemic domain can be described as a metaphorical process. Bybee, Pagliuca, and Perkins again argue that the English modal auxiliaries *must* and *should* both have experienced an extension from agent-oriented to epistemic modality, but whereas the extension of *must* is suggestive of metaphorical transfer, that of *should* might be due to the conventionalization of implicature and, hence, has to be dealt with in terms of the context model.

According to Heine, Claudi, and Hünemeyer (1991), on the other hand, for all instances of grammaticalization analyzed so far both models are simultaneously relevant, with each relating to a different perspective: the context model to the micro-level and the metaphor model to the macro-level perspective of conceptual shift. The former highlights the continuous nature of conceptual shift; that is, the fact that this shift proceeds in a series of overlapping, contextually defined extensions, while the macro-level perspective focusses on the fact that, given enough micro-level extensions, conceptual shift will cut across boundaries between cognitive domains, like that between the domain of concrete, "real-world" phenomena and that of abstract grammatical functions. In the case of our *be going to* example, the context model takes care of the many micro-level exten-

sions to be observed both in the history and the present use of this construction, including the numerous situations of ambiguity between the physical motion and the intention senses, or between the intention and the prediction senses, or even between all three senses. The metaphor model, on the other hand, is concerned with and accounts for the macro-level shift from a concrete source proposition, in our case the Motion Schema, to an abstract grammatical function.

3.2 *Dependency*

3.2.1 *The problem*

In Section 1.5 we alluded to a problem concerning the relation between auxiliaries and main verbs, that is, the question as to whether, to use Hudson's (1976:150) kinship metaphor, auxiliaries and main verbs are "sisters" (Hudson 1976) or "cousins" (Chomsky 1957), or whether auxiliaries are "aunts" (Ross 1969) or "nieces" (Matthews 1981) of main verbs. The major positions that have been maintained on this subject were briefly sketched there, namely that auxiliaries and main verbs are interpreted as being either in a dependent–head or in a head–dependent relationship, or that auxiliaries are, respectively, subordinate, coordinate, or superordinate to main verbs.

We noted that a not insignificant part of the dispute relates to models of language description: Whether a given author decides to adopt a phrase structure model or a dependency model is likely to have an influence on how he or she defines dependency. Second, it also depends on the kinds of data looked at. Myhill (1988b), for example, uses the discourse–pragmatic notion of degree of categoriality, first proposed by Hopper and Thompson (1984), to interpret auxiliaries as satellites and main verbs as nuclei, arguing that low-categoriality morphemes cluster around high-categoriality morphemes. Mufwene (1991:3) again draws attention to the fact that the notion of dependency crucially depends on whether one is concerned with syntactic or with semantic characterizations. He notes that, whereas the auxiliary heads the main verb syntactically, it is interpreted semantically not as a head but as a modifier, and there are in fact a number of authors that have analyzed auxiliaries as constituting semantic operators to be treated as verb modifiers (cf. Janssen 1983:55).

The magnitude of the problem may be illustrated by looking at the work of two authors using similar kinds of argument but, by perspectivizing different aspects of morphosyntax, arrive at sharply contrasting positions. The first is that of Matthews (1981), who argues that auxiliaries are in a determining relation to other verbs, they are dependents of main verbs since they have no independent function, they "help to make up phrases" but "do not have a larger syntactic role." Thus, in an English clause like *He has appeared*, the item *has* is said to presuppose and, hence, to be dependent on *appeared*. While the participle form *appeared* is said to exhibit a co-

variance relation with the subject, *has* does not show any direct co-variance with the subject (Matthews 1981:63–64; 155).

The alternative position is that of Schachter (1983). On the basis of syntactic criteria using the daughter-dependency grammar model of Hudson (1976), he argues that English auxiliaries are heads while main verbs are dependents. First, he suggests that the form of the verb depends on the type of auxiliary that precedes it. A verb following a modal auxiliary must be an unmarked infinitive, as in (1a); that is, it cannot be a past participle (1b) or a present participle (1c). Conversely, the form of an auxiliary is not affected by the type of verb that follows it: *should* has the same form, irrespective of whether it is followed by an intransitive nonauxiliary verb, as in (1a), or a perfect auxiliary, as in (2) (Schachter 1983:152–53).

1. a. John should sleep.
 b. John should *slept.
 c. John should *sleeping.
2. John should have been sleeping.

Schachter's second point concerns "asymmetry of occurrence": Whereas auxiliaries may occur with a following (auxiliary or nonauxiliary) nonfinite verb, as in (3a), he argues that there are no comparable constructions in which the nonfinite verb occurs without a preceding auxiliary, as is suggested by ungrammatical expressions like (3b).

- 3 a. (Who might win?) John might.
 b. *John win.

3.2.2 The Zwicky–Hudson controversy

That the dependency structure involving auxiliaries is more complicated than is apparent in such discussions has been revealed by another controversy on this issue between Zwicky (1985) and Hudson (1987) that will now be looked at in more detail. Since both authors use the category labels Aux, V, NP, VP, etc., this convention is adopted in the following discussion. Note, however, that Hudson occasionally talks of "auxiliaries" or "auxiliary verbs" instead of "Aux."

To start with, differences between these two authors can be found with regard to what a head is. According to Zwicky (1985:2), the notion "head" refers to the fact that "in certain syntactic constructs one constituent in some sense 'characterizes' or 'dominates' the whole," while for Hudson (1987:109) the head is "the element in some construction to which all other parts of that construction are (in some sense) subordinate." Second, differences also relate to the models employed for describing syntactic relationships. While Zwicky relies on constituency as the main theoretical primitive, Hudson uses a dependency model. Third, differences also exist with reference to the set of data that is presented as evidence for a given position. Not infrequently, the two authors are concerned with

entirely different parts of English language structure in their respective analysis and, hence, arrive at contrasting conclusions.

Zwicky observes that the notion head has found a number of divergent interpretations and that it has been used in at least eight different ways. Accordingly, he discusses eight kinds of headlike notions, which will be briefly sketched here. Zwicky is concerned with six kinds of constructs, which are V + NP, P + NP, NP + VP, Det + N, Aux + VP, and Comp + S. Our interest here is with one construct only, namely Aux + VP, although later on we will extend the discussion by also looking at the combination V + NP.

- i. The semantic argument. Zwicky writes that in a combination semantic functor + semantic argument it is the latter that is the semantic head, and he adds that "[. . .] in a combination X + Y, X is the 'semantic head' if, speaking very crudely, X + Y describes a kind of thing described by X" (Zwicky 1985:4). In the combination Aux + VP, VP is the semantic head because a phrase like *he will leave* describes a kind of leaving.
- ii. The subcategorisand. This is that constituent that is lexically subcategorized with respect to its sister constituent. In a construct Aux + VP, Aux is the subcategorisand because it is analyzed by Zwicky as a lexical category while VP is a phrasal category.
- iii. The morphosyntactic locus. This is the bearer of the morphosyntactic marks of syntactic relations between the construct and other syntactic units. Aux is the morphosyntactic locus in Aux + VP constructs since any inflections that are relevant to other syntactic units are, or are expected to be, located on it.
- iv. The governor. This is the constituent that determines the morphosyntactic form of some sister constituent, the latter being the governed or subordinate sister. Aux is the governor since it determines the morphosyntactic shape of VP, as we saw in the preceding paragraph with regard to Schachter's (1983) position.
- v. The distributional equivalent. This is the constituent belonging to a category with roughly the same distribution as the construct as a whole (Zwicky 1985:11). Since a phrase like *must control those penguins* has roughly the same distribution as *control those penguins*, Zwicky decides that VP, rather than Aux, is the distributional equivalent.
- vi. The obligatory constituent. According to this parameter, heads are obligatory and nonheads optional, and for Zwicky, VP is the obligatory constituent in Aux + VP constructs.
- vii. The ruler. With this term, Zwicky refers to what dependency grammarians, or at least some of them, call the head. He concludes that the ruler does in fact constitute an independent head notion which corresponds to the distributional equivalent and the obligatory constituent in endocentric constructions but to the governor in exocentric constructions. Within Aux + VP, VP is said to be the ruler (Zwicky 1985:15).
- viii. The syntactic determinant. Finally, Zwicky (1985:20) also discusses a

parameter relating to the co-occurrence relations between the constituents concerned: In some construct of category Z one of the constituents, of category X, is largely restricted to occurring within constructs of category Z, while its sister constituent, of category Y, occurs in constructs belonging to a number of categories in addition to Z, and Z can therefore be predicted on the basis of X but not on the basis of Y. In a construct Aux + VP, Aux corresponds to X, so it is the syntactic determinant.

In this presentation one parameter, called the *determinant of concord*, is not considered, first, because I do not see how it can be meaningfully applied to Aux + VP phrases and second, because Hudson (1987:117) convincingly argues that the direction of concord determination has nothing to do with the notion of a head. To summarize, according to Zwicky there is no coherent way of defining a head: According to four of his parameters it is Aux while according to another four parameters it is VP that corresponds to the notion of a head.

Hudson, on the other hand, comes to the conclusion that in all cases concerned it is Aux that has the properties of a head. Thus, he claims, Aux is the semantic argument, the distributional equivalent, the obligatory constituent, the ruler, etc. The two contrasting positions are summarized in Table 3.1.

No attempt is made here to determine which of these authors presents the more convincing arguments. Let us look instead at another kind of construct that, as I argue in this work, is equally relevant to understanding the behavior of auxiliaries, or Aux for that matter. This construct is V +

Table 3.1. Evidence for the Notion "Head"
in Aux + VP Constituents According to
Zwicky (1985) and Hudson (1987)^a

Parameter	Head status according to	
	Zwicky	Hudson
i. Semantic argument	VP	Aux
ii. Subcategorisand	Aux	Aux
iii. Morphosyntactic locus	Aux	Aux
iv. Governor	Aux	Aux
v. Distributional equivalent	VP	Aux
vi. Obligatory constituent	VP	Aux
vii. Ruler	VP	Aux
viii. Syntactic determinant	Aux	—

^aHudson (1987:125, Table 4) has a blank for Parameter (ii). His discussion suggests, however, that Aux is the subcategorisand. Similarly, Hudson also has a blank for Zwicky's interpretation of (ii). Zwicky (1985:5) makes it clear, however, that for him, Aux is the subcategorisand.

Table 3.2 Evidence for the Notion “Head”
in V + NP and Aux + VP Constituents
According to Zwicky (1985)

<i>Parameter</i>	<i>Head status in</i>	
	<i>V + NP</i>	<i>Aux + VP</i>
i. Semantic argument	NP	VP
ii. Subcategorisand	V	Aux
iii. Morphosyntactic locus	V	Aux
iv. Governor	V	Aux
v. Distributional equivalent	V	VP
vi. Obligatory constituent	V	VP
vii. Ruler	V	VP
viii. Syntactic determinant	V	Aux

NP. I will not further be concerned with Hudson’s position on this issue, which again is easy to summarize: As in the case of Aux + VP, it is always the first sister, in this case V, that he considers to be the head. Once again, Zwicky’s analysis presents a more diversified situation in that he treats NP as the semantic argument but V as the head with reference to all other parameters distinguished. This situation is presented in Table 3.2, which for convenience also contains Zwicky’s treatment of Aux + VP, already considered in Table 3.1.

A comparison of the two columns of Table 3.2 suggests that the relation between V + NP and Aux + VP is not entirely arbitrary in that it allows for the following generalization: If in the construct V + NP it is the second sister (= NP) that behaves like a head, then this will also apply to Aux + VP, while the opposite does not hold true. This observation is immediately relevant to the grammaticalization of auxiliaries, for the following reason. It has been argued in Chapter 2 that the evolution of auxiliaries is the result of conceptual transfer from a limited pool of concrete event schemas to expressions of abstract functions of tense, aspect, and modality. We also saw that the typical linguistic outcome of this process is that verb–complement structures or, to use Zwicky’s terminology, V + NP constituents, are transformed into auxiliary–main verb structures, that is, Aux + VP constituents in Zwicky’s terminology. This process has no remarkable implications if one relies on Hudson’s dependency grammar model since V is simply grammaticalized as Aux and NP as VP. In Zwicky’s framework, however, the implications are substantial since it means that, at least with reference to parameters (v), (vi), and (vii), the status of a head shifts from the first to the second sister. In other words, with the transition from V + NP to Aux + VP, the head properties such as that of a distributional equivalent, an obligatory constituent, and a ruler shifts from the first to the second sister, which means that Aux is less of a head than its lexical source V.

Such observations are in no way at variance with Hudson's analysis. As we noted, the process discussed involves on the one hand a gradual shift in dependency structure; on the other hand, however, parts of the source structure tend to survive even at more advanced stages of grammaticalization, and while Zwicky's analysis perspectivizes the shift component, that of Hudson focusses on that component that is not affected by shift. Thus, two seemingly contradictory analyses can be reconciled and accounted for once we look at the cognitive forces and the grammaticalization process underlying the facts considered.

3.2.3 Discussion

However one might wish to evaluate the contrastive positions sketched previously, it would seem that both authors have valid arguments to describe the syntactic rôle of English auxiliaries, and a survey of auxiliary constructions in languages other than English suggests that the situation in most of them is similarly complicated, in that in many cases it is hard to find the appropriate pigeon-hole for the syntactic behavior of auxiliaries. Exactly such a situation is predicted by grammaticalization theory: In most kinds of construction that can be held responsible for the development of auxiliaries, that is, in all nine event schemas discussed in Section 2.1, we are dealing with a structure [verb—complement]. Using the criteria established within the framework of dependency grammar, this structure can be interpreted unambiguously as one where the verb is the syntactic head and the complement its dependent. In the course of grammaticalization, however, this structure turns into another structure [auxiliary—main verb], as we observed in the preceding paragraph. As a result of this process, the head status of the erstwhile verb is increasingly eroded.

The fact that the relation auxiliary—main verb has the characteristics of a head—dependent structure is therefore to be expected in the genesis of auxiliaries. In their further development, however, auxiliaries tend to lose overt properties of a head and increasingly acquire the appearance of a "satellite" of the main verb. There are in particular two kinds of fact that would seem to be responsible for this appearance. First, with its development from main verb to auxiliary, the verb loses its lexical or "autosemantic" content and acquires a grammatical, "synsemantic" one (Carlson 1983; Ramat 1987:13), that is, one that is suggestive of a semantic satellite or "semantic modifier," to use Mufwene's wording (1991). In addition to this semantic observation, there is also a morphophonological one: The farther the development from main verb to auxiliary proceeds, the more likely it is that the verb loses its status as an independent word and turns into a clitic and eventually even into an affix on the new main verb (see Section 2.4). Towards the endpoint of grammaticalization, when the erstwhile auxiliary has been reduced, for example, to a verbal affix, there are only few traces that still reflect its former head status, such traces being morphosyntactic relics relating, for example, to the marking of comple-

ments and complement relations and/or of subject agreement (Martin Haspelmath, p.c.).

One important relic can be seen in the fact that even at a more advanced stage of grammaticalization, the main verb, that is, the erstwhile complement, is likely to retain its nonfinite status, as can be seen, for example, in the English Perfect, Progressive, or *be going to* Future. The relevance of this observation may also be illustrated with the following example. Schachter (1983:155–57) observes that sequences of English auxiliaries must follow the order described in (4), and one of the questions he is concerned with is: Why do modals in standard varieties of modern English never follow other auxiliaries including modals, for example, why is (5a) possible, but not (5b) or (5c)?

4. Modal–Perfective–Progressive–Passive.

5a. John should have been sleeping.

b. *John has should be(en) sleeping.

c. *John should will be sleeping.

The first part of an answer has already been volunteered by McCawley (1971:101) and is elaborated by Schachter (1983:156): English modals have a “defective verbal morphology”; they lack infinitival and participial forms, and hence predictably fail to occur in post-auxiliary positions. The second part of the answer can be found in the genesis and development of auxiliaries of English: Auxiliaries developed as main verbs in a [verb–complement] dependency structure, as sketched previously. Now, the complement had to be a nonfinite verb, and this requirement has never been given up—with the effect that modern English has a rule according to which auxiliaries govern, and hence precede, only nonfinite verb forms. Since modal auxiliaries do not have nonfinite forms, they may not be governed/preceded by auxiliaries (Schachter 1983:157). Other English auxiliaries do have nonfinite forms and hence are not subject to this rule.

It would seem that this interpretation is not affected by the position of Akmajian et al. (1979:18) according to which, contra McCawley (1971), the lack of verbal inflections in modals is a consequence of the fact that they are not verbs: Whatever categorial label we assign to English modals, the fact remains that, both diachronically and synchronically, they can be analyzed as grammaticalized and, hence, “decategorized” verbs. I am aware, however, that there is a danger of circular reasoning involved in this issue; Palmer (1983:205), for example, points out that the suggestion that English modals do not co-occur because of their defective morphology “is hardly satisfactory, for one might equally argue that their morphology is defective because, since they do not co-occur, they do not need any nonfinite forms.”

That part of the syntactic head–dependent relation survives this process is also suggested by word order structure. For example, in languages having a basic order head–dependent, auxiliaries tend to precede, while in dependent–head languages, auxiliaries are likely to follow the main verb.

Thus, in verb-initial (VSO) languages, which place the head before the dependent, auxiliaries precede the main verb, while in “canonical” verb-final (SOV) languages, where the head follows the dependent, the order is main verb–auxiliary (Greenberg 1963:66–67; Ross 1969:99ff.).²⁷

To conclude, there is no straightforward answer to the question as to whether auxiliaries are heads and main verbs dependents, although one is likely to answer this question in the affirmative once one adopts a dependency grammar model. But even in this case, there remains one major problem: the extent to which the head status of auxiliaries is reflected in the morphosyntax of a given language crucially depends on the relative degree of grammaticalization a given instance of auxiliation has reached and, accordingly, on the location of the relevant auxiliary along the grammaticalization chain of which it forms a part: In its less grammaticalized stages, the auxiliary is likely to exhibit many properties of a main verb/head constituent, while in its more advanced stages of grammaticalization, the question of a syntactic dependency relation becomes largely redundant, with the auxiliary turning into a semantic and/or morphophonological “satellite,” conveying the impression of a “semantic modifier” of the main verb. Haspelmath (1990:6–7) rightly observes, however, that even when an auxiliary has developed into a verbal affix, it does not entirely lose its status as a syntactic head.

Contrasting analyses, like those discussed in the preceding paragraphs, are to be expected in a situation as it can be observed in the case of English auxiliaries. Whether one highlights the conservative behavior of these items, as Hudson (1976; 1987) or Schachter (1983) do, or the innovative forces, as is apparent, for example, in the approaches of Matthews (1981) and Zwicky (1985), is largely a matter of descriptive elegance or economy, rather than one that can help us to explain the syntactic behavior of auxiliaries.

3.3 *Erosion*

Pullum and Wilson (1977:743) propose “auxiliary reduction” as one of the criteria for auxiliarihood. By this they refer to a phenomenon that can be observed in many languages whereby auxiliaries tend to reduce in phonetic substance and/or lose the ability to carry distinctive tone or stress, and become clitics of some immediately adjacent constituent, usually either the subject or the verbal constituent. Pullum and Wilson furthermore observe that main verbs never do so, “even though they may be homonyms of the auxiliaries.” Auxiliary reduction, or erosion, as we call it (see Section 2.4), is in fact predicted by grammaticalization theory: Once a lexeme is conventionalized as a grammatical marker, it tends to undergo erosion; that is, its phonological substance is likely to be reduced in some way and to become more dependent on surrounding phonetic material (cf. Zwicky 1970; Bolinger 1980). Since grammaticalization affects only certain uses and contexts of that lexeme, erosion tends to be confined to such

contexts while the lexeme is retained in its full form in other contexts. What this observation suggests is that grammatical forms are shorter than lexical ones, and generalizations to this effect have in fact been made on a number of languages (cf. Lehmann 1974; Bybee, Perkins, & Pagliuca 1992).

This characterization in itself is not sufficient to define erosion; on the basis of a larger sample of instances of grammaticalization, it would seem that erosion leads to what one could loosely call a simplification in the phonetic substance employed for the expression of a given concept. Simplification has both a temporal dimension, in that the articulations are compressed so that the temporal duration of the sequence is decreased, and a substantive dimension, in that, for example, the actual articulatory gestures are reduced (Pagliuca & Mowrey 1987); it has, or may have, the following major effects:

- a. Polysyllabic items are reduced to monosyllabic ones.
- b. Sound clusters are replaced by simple sounds.
- c. Long/geminated phonemes are replaced by short/nongeminated ones.
- d. Complex sounds are replaced by simple ones.
- e. Segmental phonemes give way to nonsegmental (supra-segmental) ones or are lost altogether.
- f. Nasal vowels tend to be replaced by corresponding oral ones.
- g. Contour tones (e.g., low–high) tend to be replaced by register tones (e.g., low).
- h. The ability to mark distinctive stress tends to get lost.

Thus, the grammatical markers listed in Table 3.3 are phonetically simplified vis-à-vis their respective lexical source, where “simplified” means either that there is a “simpler” consonant (*viz.* the velar *g* instead of the labiovelar *gb*) or else only one phoneme as opposed to two in the lexical item.

Marchese (1986) presents a number of instances of extreme erosion in the West African Kru languages, involving what I have referred to as the Adverb-to-TAM chain in Section 2.7.2. Her examples include the ones listed in Table 3.4.

The way erosion proceeds in grammaticalization is described by

Table 3.3. The Form of Some Grammatical Markers
and Their Lexical Sources in Ewe (Niger-Congo)

<i>Lexical source</i>	<i>Grammatical marker</i>	
nɔ, “to stay, remain”	-na, -a	Habitual aspect marker
me, “interior, inside, in”	-m	Progressive aspect marker
gbɛ, “location, direction”	-gɛ	Ingressive aspect marker
gbɔ, “to return”	ga-	Repetitive aspect marker
vá, “to come”	á-	Future tense marker

Table 3.4. Some Instances of Extreme Erosion in the Kru Languages (Marchese 1986:256–57)

<i>Language</i>	<i>Lexical source (time adverb)</i>	<i>Grammatical marker (tense marker)</i>
Nyabo	skeec(ké), “a long time ago”	e
Grebo	tetinεε, “today”	ε
Tepo	kékékpò, “today”	kè
Gbuu	poooplakana, “yesterday”	ka
Bakwé	sremagbàpek, “tomorrow”	pe
	yialewùlè, “long time ago”	i

Marchese (1986:104ff.) with reference to the nominalizing particle *ka* in some Kru languages: *ka* has been reduced to a vowel and eventually to a tonal clitic and zero in constructions involving the Motion Schema (“X goes to Y”; see Section 2.1), which has given rise to future tense categories in these languages.

A number of different kinds of phonetic erosion processes have been defined, such as cheshirization (Matisoff 1991:443), junctural erosion, peripheral erosion, syllabic erosion, etc.; concerning a more detailed discussion, see Heine & Reh (1984:21–25). In addition to phonetic erosion, there is also what may be called morphological erosion, whereby entire morphemes are eliminated in the process of grammaticalization. Xhosa, a South African Bantu language, for example, has developed a pluperfect construction based on the Serial Schema (“X does Y, does Z”), where the first verb *-ye*, a preterital form of *-ya* “go,” constitutes the auxiliary, as can be seen in (1a). The two verb forms may optionally be combined within one word unit, in which case the auxiliary is dropped or “eroded,” as in (1b).

1. Xhosa (Bantu, Niger-Congo; McLaren [1906] 1955, Stolz 1991a:332–33)
 - a. nd- a- ye ndi- theth- ile “I had spoken (long ago)”
 1.SG-PLUP- Aux 1.SG-speak- PERF
 - b. nd- a- ndi- theth- ile

Another example of morphological erosion will be found in Section 3.6; see also Heine & Reh (1984). Whether this type of erosion constitutes a distinct process or else can be viewed as a special case of phonological erosion, whereby instead of some part of a morpheme, the entire morpheme is eroded, is open to further research; for the time being, both will be subsumed summarily under the label “erosion.”

That there is a strong correlation between form and meaning in the process of grammaticalization has been argued for most convincingly in various works by Bybee and associates. Bybee, Perkins, and Pagliuca, for example, observe:

We know, for instance, that there is a strong correlation between the generality of aspectual meanings and their usual modes of expression. Habitual and progressive grams, for example, typically have periphrastic expression, whereas imperfective and perfective grams are more often inflectional affixes (Bybee 1985; Dahl 1985; Bybee and Dahl 1989). Since periphrastic expression is typically phonetically less reduced than bound expression, and since progressives, for instance, are known to evolve into imperfectives, in cases such as these we see precisely the sort of close relation between semantic and phonetic reduction predicted by the hypothesis.

Bybee, Perkins, & Pagliuca 1992:22

According to this hypothesis, the development of grammatical material is characterized by the dynamic coevolution of meaning and form.

There is, however, one *caveat* with this generalization: It is based on quantitative observations and allows only for probabilistic predictions. First, as we saw in Section 2.4, conceptual grammaticalization precedes erosion. This means that at a given stage, a morpheme may become firmly established as a grammatical marker although its phonetic substance is still unaffected by this process. Second, while in some cases erosion occurs quite early in the process of grammaticalization, in other cases it takes a long time to start, and the reasons for this different behavior are still largely unclear. The High German auxiliaries *haben*, 'have,' and *sein*, 'be,' had assumed their grammatical functions as Perfect or Passive markers many centuries ago at the stage of Old High German (Lockwood 1968), yet their phonetic shape is still identical with that of their respective lexical source items.

Third, erosion is in no way confined to grammaticalization (see the following); rather it is a natural process to be observed in all kinds of language development and it is not always possible to decide unambiguously which kind of forces were involved in a given case. To conclude, while the Bybee/Perkins/Pagliuca hypothesis holds true on statistical grounds, the reader must not be surprised to find numerous exceptions once he or she looks at individual instances of grammaticalization.

A number of parameters have been proposed to account for erosion. The first concerns iconicity or isomorphism and has to do with principles of iconic coding, in particular with what Givón (forthc.:3–4) calls the *quantity principle*. According to one of the three possible manifestations of this principle, a larger chunk of information will be given a larger chunk of code. Givón argues that this applies, for example, to lexical words, which require a larger chunk of code than grammatical morphemes: "[. . .] lexical words are generally *larger* than grammatical morphemes (i.e., larger at the code level), and they are clearly larger/richer semantically. Pronouns are generally smaller than nouns, and they are clearly smaller and more generic semantically" (Givón 1985:198). Accordingly, one would expect that once a lexical item is grammaticalized, its phonetic substance is likely to be reduced. Similarly, Haiman (1983:801) observes that to a consider-

able extent, the conceptual simplicity of a notion corresponds to the simplicity of its expression, and Lehmann (1974) proposes a "general law of parallel complexity of expression and content" (1974:116) according to which both form and meaning of lexemes are more complex than those of grammatical items. In the past, grammaticalization has frequently been described as a process involving semantic bleaching/impoverishment or a "weakening of semantic content" (Bybee & Pagliuca 1985). As was noted in Section 3.1.1, however, in addition to bleaching there are also semantic gains to be observed in this process.

While complexity in form can be measured with reference to the phonetic features of sounds and the size of the phonetic material employed, complexity in meaning is more difficult to define; most frequently it has been described in terms of semantic features. The meaning of grammatical formatives, but not that of lexemes, can be said to be composed of a small set of features, and while all these features may also be contained in lexical items, not all lexical features are also found on grammatical markers. The feature [MARRIED], for example, Lehmann (1974:117) argues, is part of such nouns as *husband* or *bachelor* but never of grammatical formatives.

The second major parameter to account for erosion has to do with economic motivation (Haiman 1983; 1985) and relates to the pragmatic factor of frequency of use. Grammatical markers have a higher frequency of occurrence than lexical items (Bybee, Perkins, & Pagliuca 1992), and that frequently used words are shorter than less frequently used ones has already been established by Zipf (1935): "people will shorten the linguistic expressions that are used most commonly for economy, that is to simplify their linguistic utterances" (Croft 1990:156).

There is a third parameter that can immediately be derived from the preceding one. Frequency of use and probability of occurrence determine the information value a given linguistic symbol has (cf. Lehmann 1974:113): The higher its probability of occurrence, the lower its information value is, and that there exists a positive correlation between size of information value and the amount of coding material employed for the expression of the relevant information has been argued for repeatedly in studies on communicative efficiency. Conceivably, this parameter relates to the observation made by Bybee and Pagliuca (1985) according to which it is their high frequency of use that makes certain lexemes eligible candidates for grammaticalization.

Finally, there is also physical motivation, relating to a principle that more of a century ago was referred to by Gabelentz (1891:251) as *Abnutzung* ("abrasion"): The more a physical entity is subject to physical manipulation, the more it is likely to wear out. Obviously, frequently used linguistic symbols are more likely to undergo *Abnutzung* than less frequently used ones and, hence, grammatical markers are more likely victims of erosion than lexemes.

Isomorphism/iconic coding, economy, information value, and

Abnutzung—they all have the same effect in the process of erosion, and so far, there is no unambiguous way of deciding whether any of them is more basic than others. What this discussion suggests is, first, that some of these factors are closely interrelated, to the extent that they may be viewed as different ways of expressing one and the same thing. Second, it also suggests that we do not dispose of any adequate means of measuring the relative significance of each of them on the one hand, and of their interrelation on the other. Finally, and most important, we are still far from being able to draw on a model that would allow us to view erosion in particular and the relationship between form and meaning in general in a wider pattern.

There are, however, two observations that appear to be relevant here, namely, first, that grammaticalization starts out with conceptual manipulation whereby abstract, grammatical contents are expressed in terms of concrete, lexical contents (see Chapter 2). This suggests that all four factors are ultimately triggered by cognitive forces, more precisely by desemanticization. The second observation is that erosion is not confined to grammaticalization. On the basis of massive evidence from the West African Kru languages, Marchese (1986:272) argues that erosion, or phonological reduction in her terminology, can play a major rôle in inducing semantic and/or syntactic reanalysis, that is, grammaticalization; at the same time, reanalysis as a grammaticalization process may also trigger erosion. Note also that the English copula verb *be* in its third person singular form is not only eroded (*is* > *'s*) in grammaticalized uses such as (2) where it serves progressive (2a) or passive marking (2b), but also in nongrammatical uses such as (3), where it has a main verb function (cf. Zwicky 1970:329).

- 2 a. He's going.
- b. He's criticized every day.
- 3 a. He's a farmer.
- b. He's sick.

Whenever instances of erosion like (3) can be observed, they are likely to involve items of high frequency of occurrence. Thus, rather than grammaticalization, it is the pragmatic factor of frequency of use that appears to be most immediately responsible for erosion. Observations like these are suggestive of a sequence that can be tentatively sketched as in (4).

- 4. Desemanticization > High frequency of use > Loss of information value
 > Erosion

In accordance with what has been observed here, the sequence described in (4) has to be taken with care, and it may require reconsideration in the light of a more adequate empirical basis than is now available. First, it does not take care of the fact that, rather than succeeding each other, the four processes overlap or may even be ongoing simultaneously, and, second, the sequence does not account for all the forces that can be held

responsible for erosion; the question as to how this sequence relates to the parameter of iconic coding, for example, remains entirely open to further research.

3.4 On Categorization

Virtually all models available to the linguist to analyze and describe language are based on discrete logic and, accordingly, rely on “classical categories” as a means of categorization. Classical categories typically have the following properties (cf. Taylor 1989:23–24):

- A1. They are defined in terms of a conjunction of necessary and sufficient attributes.
- A2. All members share the same set of definitional properties.
- A3. All members of a category have equal status.
- A4. The defining features are binary.
- A5. Categories have clear boundaries.

Work on auxiliaries has almost entirely been based on models using classical categories as the sole means of scientific taxonomy, and this fact can be held responsible for the many problems alluded to in Chapter 1. These problems are essentially of two kinds. First, they concern the question of whether the categories proposed within a given linguistic description are assigned their appropriate place in grammar. Kastenholz (1979:88), for example, claims that in vehicular Dyula, a Manding dialect spoken in the north of the Ivory Coast, there are only six words that deserve to be called verbs while what is usually referred to as verbs in this language are actually verbal nouns. Other authors again refer to these “verbs” as “predicate markers” or “auxiliaries” and to the “verbal nouns” as “verbs” (cf. Brauner 1974; Kastenholz 1989). What we are dealing with in this language are constructions in transition from a [verb–complement] to an [auxiliary–main verb] structure, in accordance with the grammaticalization of the Location Schema (see Claudi 1989:137ff. for details). Both kinds of analysis proposed by these authors are justified to some extent, but neither is adequate to account for the amphibian nature of such structures in transition.

Second, and more important, these problems concern the nature of linguistic categories in general. Take the following example involving the English item *be going to* that we have looked at already in previous chapters. This item has a verbal meaning in (1a), either a verbal or a grammatical meaning in (1b), and only a grammatical meaning in (1c).

- 1 a. He is going to town.
- b. He is going to work.
- c. He is going to come.

In accordance with the Overlap Model discussed in Section 2.2, the three uses of *is going to* in (1) represent three different stages of the grammatical-

ization of this item, somehow as sketched in (2): Example (1a) is suggestive of Stage I, (1b) of Stage II, and (1c) of Stage III.

2. Stage:	I	II	III
Meaning:	Verbal	Verbal	
		Grammatical	Grammatical

Assuming that the different uses of *is going to* in (1) belong to one and the same category, how can we account for this fact? Property (A1) makes classical categories an inadequate means for this purpose, for apart from their identical form, there is no attribute shared by all three uses of *is going to* in (1). Even if we were to follow the proponents of the autonomy hypothesis (see Section 1.2.1) and decided that *is going to* belongs to two different categories, one category labelled "Verb" and represented by Stage I and the second category labelled "Aux" and represented by III, we are faced with the problem of how to deal with Stage II, which combines attributes each of which is used as a definitional property for the categories "Verb" and "Aux," respectively, and which therefore serve as distinguishing properties between these categories. In spite of the various attempts that have been made to find a solution for Stage II situations, and some of these attempts were discussed in Chapter 1, such situations are simply beyond the scope of classical categories.

More recently, an alternative model of categorization has been proposed that does not suffer from such shortcomings. Within this model, the basic unit of categorization is the prototype, a notion developed by the psychologist Eleanor Rosch and adopted by a number of linguists, especially by those working in the paradigm of cognitive linguistics. Prototypes differ from classical categories in that they cannot be defined by means of a set of necessary and sufficient properties; rather they have the following attributes in particular (Rosch 1978; Mervis & Rosch 1981; Geeraerts 1991:2; see also Taylor 1989; MacLaury 1991):

- B1. Not every member is equally representative of its category.
- B2. Prototypical members share a maximum of attributes with other members and a minimum with members of contrasting categories.
- B3. The structure of categories takes the form of a set of clustered and overlapping attributes.
- B4. Categories are blurred at the edges; they have fuzzy boundaries.

Prototypes are more flexible entities than classical categories; especially property (B3) makes them well suited to handle such phenomena as overlapping and chaining. There is, however, one problem that prototype research is likely to face when extended to the study of auxiliaries, and this problem relates to properties (B1) and (B2) in the characterization, namely to the question as to how prototypicality, that is, representativeness or degree of membership within a category, is to be defined. Most works on prototypes have focussed on concepts that lend themselves to an analysis within such a framework, in particular concrete items such as animals or

artifacts. As has been demonstrated by Heine (1992), establishing prototypicality turns out to be more difficult, if not impossible, in the case of grammaticalization chains (see the following).

There is, however, a third kind of categorization that appears to be more appropriate to describe categories of the kind presented by grammaticalization chains. This kind is based on family resemblance logic, and the resulting categories are referred to as *family resemblance categories*. Family resemblance categories are similar to prototypes in that they share two of the four properties listed (B3 and B4). For example, both prototypes and family resemblances involve context-dependent abductive judgement (Givón 1989:39), are based on a principle of *relative similarity*, and have fuzzy boundaries, and both thus contrast with classical categories that are based on the criterion of identity versus nonidentity and are defined in terms of a set of necessary and sufficient criterial properties. In addition, family resemblance categories have the following properties, which are also compatible with the notion of prototype:

- C1. No attribute is shared by all members of the category.
- C2. No member combines all attributes defining membership within the category.

This characterization might suggest that family resemblance categories constitute a sub-class of prototypes or, conversely, that prototypes are a special instance of family resemblance categories. Such a characterization is in fact suggested by descriptions provided by adherents of prototype theory who argue that family resemblance constitutes one of the main parameters in defining prototypes (see, e.g., Geeraerts 1991). Rosch and Mervis (1975), for example, found that there is a positive correlation between prototypicality rating and degree of family resemblance: Their research suggests that the more attributes a given member has in common with other members of the same category, the more likely it is to be rated as highly prototypical (see property B2).

In spite of such correlations, however, it would seem that the two should be separated, especially for the following reasons. First, while they differ only in two attributes, these are actually the most salient ones for establishing prototypes, and for distinguishing prototypes from other kinds of categories. Second, since prototypes and family resemblance categories highlight different taxonomic principles, they may lead to different kinds of categorization. Third, while certain "real-world" phenomena are described best in terms of prototype structure, others are more appropriately analyzed as family resemblance categories.

The English item *furniture*, for example, lends itself to a prototype analysis; there are clear differences in the degree of its category membership, for example, between such items as *chair* or *sofa*, which are highly prototypical members, and *radio* or *telephone*, which are less prototypical members of the category *furniture* (Rosch 1975). Much the same holds true for items belonging to some more abstract conceptual domains such

as environmental scenes (Tversky and Hemenway 1983), musical themes (Welker 1982), artistic style (Hartley & Homa 1981), rules (Hampton 1982), and sentences (Corrigan 1986).

Items that have given rise to grammaticalization chains, on the other hand, appear to belong to the kind of phenomena that are more difficult to describe in terms of prototypicality, at least as far as this notion is accessible to the linguist. For example, given a minimal chain such as the one exemplified in (1), which of the three uses of *be going to*, or of the stages in (2), is highest in prototypicality or most representative of the category that includes these three uses? On the basis of property (B2), this would be the Stage II member since it has the highest number of attributes (namely two) in common with the other two members. On the other hand it might seem counterintuitive that Stage II, which combines a lexical and a grammatical use, should be more representative of the category than either the clearly lexical Stage I or the grammatical Stage III (see Lichtenberk 1991; Heine 1992).

That it is the central Stage II rather than any of the peripheral Stages I or III that shares the highest number of attributes with other members is not due to factors that are considered essential in prototype formation, such as perceptual salience, cue validity, etc.; rather it is an immediate outcome of the specific circumstances under which grammaticalization chains develop: They arise via the conceptual manipulation of concrete schemas, a process that leads to the emergence of a number of development stages differing from one another in their relative degree of grammaticalization. Earlier stages are associated primarily with a lexical semantics and morphosyntax, and later stages with grammatical meanings and the morphosyntax of grammatical markers, while intermediate stages combine the attributes of both earlier and later stages. This development is immediately responsible for the very nature of grammaticalization chains as linguistic categories. As has been argued by Heine (1992), these categories can be described in terms of two main parameters, which are (i) relative degree of grammaticalization and (ii) conceptual relationship. With reference to (i), these categories can be described as *unidirectional* structures. Unidirectionality, which is one of the main principles of grammaticalization (see Heine, Claudi, & Hünemeyer 1991, Chapter 1), entails the following characteristics:

- a. Grammaticalization chains can be defined with reference to their endpoints. These endpoints differ from one another in their relative degree of grammaticalization, in that the final member of such a chain is a grammaticalized form of the initial member.
- b. Any member along this chain can be defined with reference to these endpoints: The closer a member is to the initial member, the less grammaticalized it is.
- c. Different members along this chain can also be defined with reference to one another: A member to the left is less grammaticalized than any one to

its right, and the closer the two members are to each other, the less they differ in their relative degree of grammaticalization, that is, the more attributes they share and, hence, the more similar they are.

With reference to (ii), grammaticalization chains can be described as family resemblance categories having the following properties:

- d. Beyond their common form, there is no attribute shared by all members of the chain.²⁸
- e. None of the members combines all the attributes distinguished.
- f. Each member has at least one attribute in common with one or more other members, but the two endpoints typically do not share any attribute.
- g. Nonperipheral members have a higher number of attributes in common with other members than peripheral ones.
- h. Adjacent members have significantly more attributes in common than nonadjacent members.

To conclude, neither classical categories nor prototypes appear to provide adequate models for describing auxiliaries. The observations made in this section suggest that auxiliaries in particular and grammaticalization chains in general can be described as linear family resemblance categories. Whether this notion is only relevant to the kind of phenomena considered here or else can be applied to other kinds of linguistic structure remains to be established by future research. Note that prototype categories have been developed within the framework of psychological methodology (Rosch 1973) while the present discussion was confined to a linguistic consideration. So far, no psychological methodology has been applied to determine the nature of grammaticalization chains.

3.5 *Reanalysis*

One of the most frequently employed notions to describe the development of auxiliaries is that of reanalysis (Lord 1973, 1989; Givón 1979; Heine & Reh 1984; Marchese 1986). Marchese, for example, discusses the development from main verbs such as “go,” “come,” or “have” to auxiliaries in the Kru languages of the Ivory Coast and Liberia as an instance of reanalysis. According to her, reanalysis has the following characteristics in these languages:

- a. It may be triggered by erosion (i.e., phonological reduction in her terminology), but it may also itself trigger erosion (Marchese 1986:272).
- b. It requires an intermediate step of structural *ambiguity* whereby a given construction can be interpreted in two different ways (1986:271; cf. Section 2.2).
- c. It can take one of the following forms: Either it shifts elements from one grammatical category to another, or else it may have more profound effects on grammar by creating a new grammatical category. Marchese (1986:272) cites the shift from an emphatic marker to a negative marker as

an example of the former process and that of main verbs such as “go,” “come,” or “have” to auxiliaries as an example of the latter, at least as far as the Kru languages are concerned.

Reanalysis, she argues, may lead to simplification in grammar (cf. Lightfoot 1979) in that it “can be seen as the collapsing of complex structures into simplex ones” (Marchese 1986:272). She presents the shift, respectively, from the Location and the Motion Schemas to Progressive aspect and Future tense categories in the Kru languages as examples, whereby the complex syntactic construction (1) was reduced to the simple construction (2).

1. S V₁ [(O) V₂ NOMIN] OBJECT COMPLEMENT
2. S AUX (O) V

At the same time she points out that reanalysis also results in a complication in the grammar because it adds new structures to the language. With reference to the Kru languages, reanalysis was responsible for the introduction of a new grammatical category AUX, as well as for a new word order structure: while the earlier order was SVO, SOV order emerged as a result of the grammaticalization/reanalysis of the Location, Motion, as well as other schemas (Marchese 1986:269ff.).

The term *reanalysis* has been employed in a number of recent linguistic works. The most comprehensive treatment has been presented by Langacker (1977:59, 116), according to whom reanalysis refers to “a change in the structure of an expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation.” A specialized use has been made by scholars working in the generative paradigm (Chomsky 1981; Radford 1988; see especially Abraham *forthc.*), according to whom the term stands for a rule whereby certain elements belonging to different constituents (e.g., the English items *stare* and *at*) are treated optionally as belonging to the same syntactic constituent (*stare at*).

It is in studies on grammaticalization, however, that the term has found its widest application. There are three main uses to which it has been put. First, it has been employed to describe an essentially morphological process, viz. the transition from a lexical to a grammatical item, in accordance with the classical definition of grammaticalization volunteered by Kuryłowicz (1965:52). Thus, Lord (1976:179) refers to it as a process whereby, for example, a verb loses “semantic, morphological and syntactic properties, and survives as a grammatical morpheme [. . .].” Marchese (1986:269ff.) cites the transition from main verb to auxiliary, or from perfect marker to factative marker as instances of reanalysis (see also Lord 1989:4), and one of the examples of reanalysis provided by Givón (1979:243) concerns the development from clitic pronoun to automatic agreement marker. Second, reanalysis has also been used to refer to a pragmatic–syntactic process, namely for the reinterpretation of sentential or discourse constituents, rather than of words or morphemes. This posi-

tion as well is connected with the work of Givón, who presents the shift from topic constituents to subject constituents as an example (Givón 1979:209).

Third, the term *reanalysis* has also been proposed for what Langacker (1977:64) calls boundary shift and Heine and Reh (1984:110) constituent–internal reanalysis. This is a process whereby existing syntactic or other boundaries are redefined. We may illustrate the process with reference to the Purpose Schema discussed in Section 2.1.3. As we saw there, this schema typically has a form as sketched in (3), where it consists of the Possession Schema (“X has Y”) plus a purpose or goal adjunct [“(in order) to Z”]. Now, (3) may be “reanalyzed” as in (4), whereby the adjunct (“to Z”) turns into a complement and the erstwhile object complement into a complement of the erstwhile adjunct.

3. “X has Y # (in order) to Z”

4. “X has to # Z Y”

The effect this process has is that an expression for verbal possession, as in (3), turns into another expression denoting the agent-oriented modality of obligation, that the main verb (“has”) turns into a modal auxiliary (“has to”), and the adjunct (“Z”) into the main verb. Fleischman (1982a:121) cites the following example from Latin, where (5) illustrates the situation in Classical Latin and (6) a subsequent stage in the development of this language:

5. habeo haec # dicere “I have these things # to say”

6. habeo # haec dicere “I have to # say these things”

While the label *reanalysis* has turned out to be a useful one in studies of linguistic change, its relevance to grammaticalization theory is not entirely clear, and it is therefore not treated as a technical term in the present work. First, its application to processes of grammaticalization has remained somewhat vague; reviewing the relevant literature one gets the impression that the term has been used in so many divergent ways that one can define it simply as the reinterpretation of one entity as another entity. In fact, in accordance with the wide range of applications it has received, reanalysis has been used largely interchangeably with a number of other terms such as transfer, shift, reinterpretation, or simply change, and it remains unclear how it can be delineated from these terms. We may illustrate some of the uses of the term *reanalysis* with an example from English that has been discussed already in other contexts in preceding chapters, relating to the grammaticalization of the auxiliary phrase *be going to* to a future tense marker, as in (7), where (7a) is suggestive of a lexical and (7b) of a grammatical use of this phrase.

7 a. Suzanne is going to town.

b. The rain is going to come.

In examples like this, the term *reanalysis* has been employed variously to refer to the fact

- a. That the full verb "go" turns into an auxiliary,
- b. That a concrete/lexical concept [physical motion] turns into an abstract/grammatical one [tense],
- c. That the semantics of "go" is bleached out to become part of an expression for future,
- d. That the syntactic phrase *is going to* turns into a complex morphological marker, or
- e. That the constituent structure [main verb—complement] is reinterpreted as another constituent [auxiliary—main verb].

Considering the wide range of uses the label *reanalysis* has found, and to avoid that it therefore becomes vacuous, Heine and Reh (1984:95ff.) propose to reserve it for instances such as (c), that is, to the reinterpretation of syntactic and pragmatic constituents, and Myhill (1988a:353) uses the term *restructuring*, rather than reanalysis, for (a), where restructuring "involves a synchronic change from a verb to an auxiliary."

Second, while "reanalysis" is conceived of by many students of grammaticalization as being primarily a diachronic notion, others treat it as strictly belonging to the vocabulary of synchronic grammar (cf. Chomsky 1981; Radford 1988).

Third, reanalysis is essentially a concept of cognitive psychology, yet so far it has not been described adequately in terms of psychological parameters. Fourth, while it has been employed by some as a central item of grammaticalization terminology, it is hard to reconcile in at least one important respect with grammaticalization theory in that the principle of unidirectional development, which is generally considered to be a canonical property of grammaticalization, is not inherently associated with reanalysis, as has been demonstrated by Heine and Reh (1984). For example, in a number of African languages, a proposition of the form "It is X that Y," where "It is X" is the main clause and "that Y" a subordinate clause, has been reanalyzed as a structure where "It is X" turns into a focus-marked constituent and "that Y" into the main clause "by default" (Lord 1989:5). This kind of reanalysis of a subordinate clause as a main clause contrasts with canonical instances of reanalysis to be observed in connection with grammaticalization according to which main clauses turn into subordinate clauses, but not vice versa (see Heine & Reh 1984:101ff.).

3.6 On Explanation

Following Lass (1980), I will assume that "classical" deductive—nomological explanations of the kind described by Hempel and Oppenheim (1948) are either outside the scope of fields such as linguistics or nonsensical. Like most linguists, however, I will also assume that explanations in this field are both possible and meaningful, and that they have to be multicausal rather than mono-causal, probabilistic rather than nomological, and context-dependent rather than context-free, in short, they should help us to view facts in a wider context or in a larger pattern (Givón

1989:301). What I have in mind corresponds less to the notion of explanation as used, for example, in the natural sciences than to Greenberg's scalar concept of *generalization* (Greenberg 1968; 1979), according to which a more specific statement can be said to be explained by a more general one that again may be explained by a yet more general statement; that is, "a successful generalization shifts the kinds of questions that are asked to a higher plane" (Croft 1990:249).

The problem of explanation was raised already in Section 1.8, where a catalog of questions was presented as to why auxiliaries are the way they are, and why they exist in the first place. We observed that most of these questions have not been raised in previous works, and those that have did not receive the kind of attention they deserve; in other words, in previous works on the subject, attention in explaining the nature of auxiliary constructions was limited. I have drawn attention to a few exceptional studies, like those written in the paradigm of localism, but on the whole, scholarly interest in the past focussed largely on describing rather than on explaining auxiliaries, and an interest in providing external explanations has been minimal.

The main purpose of Chapter 2 was to provide an explanatory framework on the basis of grammaticalization theory. In Section 2.1, a small number of concrete event schemas was identified that ultimately can be held responsible for the many attributes that characterize the linguistic behavior of auxiliary constructions. These schemas are "pressed into service" for the expression of such functions as tense, aspect, modality, and gradually develop into grammatical categories. This process involves a large number of successive developments that are referred to as *stages of grammaticalization*. Since with the development of a new stage, previous stages do not disappear from the language, the result is a series of overlapping grammaticalization stages that co-exist in the synchronic structure of that language in the form of grammaticalization chains. A number of individual developments, such as decategorialization, cliticization, and erosion (see Section 2.4.1), are part of the overall process of grammaticalization and provide subsidiary explanatory parameters.

The notion of explanation, as applied to auxiliation, relates to a number of distinct but interrelated problems. First, it concerns the question as to why such items exist at all and why they have to have the particular properties they have, such as the ones listed in Section 1.7. Second, it also has to be concerned, not with the auxiliaries themselves, but with the peculiar morphosyntactic structures that tend to be associated with the use of auxiliaries, and that are hard to reconcile with the structures to be found elsewhere in the same language. Third, it also concerns language typology: As has been demonstrated in some recent studies (see especially Claudi 1989, 1990; Heine *forthc.*), the analysis of Verb-to-TAM chains can be instrumental in establishing why a given language or language group has the kind of basic word order it has. That these questions are in fact closely interrelated and can be answered with reference to one and the same

explanatory parameter may be illustrated with the following example involving the Progressive aspect in Ewe, a Niger-Congo language spoken in eastern Ghana and southern Togo.²⁹ As can be seen in the following sentences, Ewe has a peculiar way of forming Progressive and Ingressive aspects; in order to save space, I will deal here only with the Progressive aspect. Example (1) is a transitive sentence in the “Aorist tense,” which is the most unmarked tense–aspect category denoting present situations when combined with stative and inchoative–stative verbs but situations in the past when combined with action and terminative verbs. (2) is the corresponding Progressive form of (1).

1. Ewe (Kwa, Niger-Congo)
 Kofi tu xɔ
 Kofi build house
 “Kofi built a house”
2. Kofi le xɔ tu- m̃
 Kofi PROG house build-PROG
 “Kofi is building a house”

As can be seen in (2), the Progressive aspect is marked by a discontinuous morpheme *le . . . m̃*, the first part of which is homonymous with the locative copula *le*, “be at,” exemplified in (3).

3. Kofi le xɔ me
 Kofi be.at house inside
 “Kofi is in the house”

A grammar of Ewe that is not confined to description but aims at explaining language structure has to account for the following kinds of question:

- a. Why does Ewe use a discontinuous marker to express a single grammatical function?
- b. Is there a reason why the first part of this marker, *le* is “homonymous” with the locative copula?
- c. Why are there two different word orders in (1) and (2); that is, why does the object follow the verb (= SVO) in the Aorist but precede it (= SOV) in the Progressive?

These are not the only questions that have to be answered in order to explain the structural difference between the two tense–aspect categories. Note, for example, that *le* may be optionally omitted, thus making (4) an optional variant of (2), and when the object is not a noun but a personal pronoun, the paradigm of (inalienable) possessive pronouns has to be used for object marking in the Progressive (5b) though not in the Aorist (5a), as can be seen in (5).

4. Kofi xɔ tu-m̃
 “Kofi built a house”

- 5 a. Kofi tu e b. Kofi le é- tu- m̃
 Kofi build 3.SG.OBJ Kofi PROG 3.SG.POSS-build-PROG
 "Kofi built it" "Kofi is building it"

This raises the following questions in addition:

- d. Why are there two markers of the Progressive, one being the full form and the other the reduced form?
 e. Why is there a distinct set of object pronouns used in the Aorist, whereas pronominal objects are marked by possessive pronouns in the Progressive?

All these questions can be answered with reference to the genesis of the Ewe Progressive marking, which is derived from a construction roughly as sketched in (6) and hence presents an instance of what I have called in Section 2.1 the Location Schema.

6. *Kofi le xɔ tu- tu- ´ me
 Kofi be.at house build-build-NOMIN inside

While construction (6) no longer exists in modern Ewe, there is a similar one, differing from (6) only in the fact that it uses the locative postposition *dzi*, "on," instead of the postposition *me*, "inside" [see (12)]. This construction, which has essentially the same meaning as the Progressive construction exemplified in (2), is illustrated by (7). As is to be expected whenever the Location Schema is employed, the main verb is encoded in a nominalized form (NOMIN), which is achieved in Ewe by reduplicating the verb stem and suffixing a floating high tone to the reduplicated form. When the verb is nominalized, object complements are presented as inalienable possessor noun phrases. In Ewe the possessor precedes the possessed constituent, and there is no formal marking in the case of inalienable possessive constructions. Thus, the phrase *xɔ tu-tu-´* in (6) and (7) means literally "the house's building"; that is, the object ("house") appears as a possessive modifier on the nominalized verb.

7. Kofi le xɔ tu- tu- ´ dzi
 Kofi be.at house build-build-NOMIN on
 "Kofi is building a house"

Structure (7) has not been further grammaticalized; (6), however, has undergone some largely predictable grammaticalization processes (see Section 2.4.1): In the development from concrete schema to grammatical marker, the locative postposition *me* underwent erosion and affixation; that is, it was reduced to *m* and became a suffix of the preceding main verb, the floating high tone of the nominalization marker being stranded on this suffix. In addition to phonetic erosion, another process took place according to which complex forms that are used for the expression of one basic function tend to be simplified. This process has been described by Heine and Reh (1984:97ff.) as adjustment. Adjustment involves a development towards isomorphism, whereby a one-to-one correspondence is

established between form and meaning. The first casuality of the adjustment process was the reduplicated verb, which was replaced by the simple verb. Adjustment has also optionally affected the marker *le*. Thus, the erstwhile Progressive construction consisting of four morphological elements, namely *le*, verbal reduplication, the tonal nominalization marker, and *-m*, was reduced to one element, *-m*, as can be seen in example (4). Since the adjustment process involved the gradual loss of morphological elements, it can be referred to alternatively as morphological erosion (see Section 3.3). This development has not affected verbs without objects, that is, intransitive verbs, where reduplication is still present, for example,

Ewe Kofi le va- vá- m
 Kofi PROG come-come-PROG
 "Kofi is coming"

But even with intransitive verbs, reduplication tends to be eliminated in modern Ewe (see Heine *forthc.*).

To conclude, the peculiar structure of Progressive marking in Ewe exemplified in (2) can be explained as a result of the grammaticalization of a concrete schema involving largely predictable processes such as erosion, affixation, and adjustment. The various stages to be reconstructed in the development from Location Schema to grammatical category are summarized in (8).

8. Stage	Structure				Comments
I	*le	X (= NP)		me	Location Schema
	be			inside	("be inside X")
II	*le	Verb-	Verb-'	me	("be inside doing")
III	*le	Object	Verb-'	me	Loss of verb reduplication when preceded by an object
IV	le		Verb-	m	Erosion and affixation of *me
V			Verb-	m	Erosion of le

We are now in a position to answer the questions raised here: That the Progressive morpheme is a discontinuous marker is due to the fact that it is a grammaticalized or conventionalized form of the Location Schema consisting of the erstwhile main verb *le*, "be at," and the postposition *me (> *m*), "inside" [Question (a)]. The "homonymy" of *le* is no coincidence: Its use as a Progressive marker constitutes a grammaticalized form of its lexical use exemplified in (3) [Question (b)]. The optional deletion of *le* and the resulting optional variation found between (2) and (4) is due to the effects of the adjustment strategy, which aims at restoring isomorphism between form and meaning [Question (d)]; see the following]. Questions (c) and (e) can be answered with reference to the fact that object nouns of nominalized verbs are encoded in Ewe as possessor nouns and, accordingly, object pronouns are encoded as possessive pronouns on

the (nominalized) main verb. Since the possessor precedes the possessed constituent, the result is an SOV syntax in the Progressive aspect contrasting with the SVO syntax found elsewhere in the language.

Our explanation is chiefly diachronic, especially since native speakers are no longer aware that the Progressive suffix *-m* is etymologically related to the postposition *me*, “inside,” nor that the Progressive construction is historically derived from the Location Schema. At the same time, it also has a cognitive base in that it draws on certain principles of conceptual manipulation to account for structural similarities between seemingly unrelated linguistic facts. The rules of Progressive marking in Ewe are not only relevant to this particular construction, they also apply to other parts of the language that were affected by the same general process. For example, the adjustment strategy mentioned, according to which nonfinal verb reduplication was given up in the case of transitive verbs but not in the case of intransitive verbs, is reflected in a more general rule of nominalization, as can be seen in (9), where the transitive verb *tu*, “to build” (9a), is contrasted with the intransitive verb *dzó*, “to leave” (9b) (for more details, see Clements 1975).

- | | | | |
|------|----------------------|-----------------------|--------------------|
| 9 a. | <i>xɔ</i> | <i>tu- tu-</i> | <i>lá</i> |
| | house | build-build-NOMIN | house-build- AGENT |
| | | “house building” | “a house builder” |
| b. | <i>dzo- dzó</i> | <i>dzo- dzó- lá</i> | |
| | leave-leave-NOMIN | leave-leave-AGENT | |
| | “leaving, departure” | “somebody who leaves” | |

The notion of explanation is closely associated with that of prediction, even though there is no necessary one-to-one correspondence between the two; Lass (1980:13), for example, argues that there is a certain asymmetry between them since any (correct) explanation involves correct prediction, while not every correct prediction involves explanation. Grammaticalization studies are not only a means of relating present language states to past situations, rather by proposing generalizations on past development they also allow us to predict future developments. It goes without saying that such predictions are based on statistical inference and, hence, are probabilistic rather than mechanistic or deductive–nomological (cf. Anttila 1989:401). This may be illustrated with reference to the instance of Progressive marking in Ewe just considered.

The first example concerns the nature of conceptual manipulation leading to the development of grammatical categories. So far, six of the source schemas discussed in Section 2.1 have been found to be employed in the languages of the world for the development of Progressive aspect categories, which are the Location Schema, the Action Schema, the Equation Schema, the Accompaniment Schema, the Manner Schema, and the Serial Schema (see Section 2.1.4, Table 2.2). While it is likely that more source structures will be identified in future research, most progressive categories identified so far are derived from any of these six schemas.

Among these again, the Location Schema is statistically clearly predominant, to the extent that it probably accounts for more progressive constructions than all other schemas taken together (cf. Blansitt 1975; Heine *forthc.*), our Ewe example being one out of the hundreds of instances of it to be found world-wide. This fact allows us to formulate the following probabilistic prediction:

If a given language is going to acquire a new progressive aspect, this category is most likely to be derived from the Location Schema.

The second example concerns the adjustment strategy mentioned. In accordance with the Overlap Model discussed in Section 2.2, when an earlier structure gives way to a new structure then there is an intermediate stage where both the earlier and the later structure co-exist. This means that whenever we come across such an intermediate stage, we can predict the later stage. The optional use of *le* in the Progressive construction of Ewe appears to mark such an intermediate stage in the transition from obligatory use to loss; note that the use of *le* was still obligatory at the beginning of this century, as is suggested by descriptions of the language from that time (cf. Westermann 1907). Under the proviso mentioned it can therefore be predicted that future generations of Ewe speakers are likely to give up the use of *le* in Progressive constructions.

As was observed, grammaticalization is not only concerned with the behavior of auxiliaries; rather it also provides a framework for explaining the syntactic structures of which auxiliaries are a part. That Ewe has an SOV syntax in Progressive (and Ingressive) constructions but an SVO syntax elsewhere can be accounted for with reference to the use of the Location Schema whereby the possessor–possessed syntax was extended to the syntax of the clause and gave rise to an object–verb word order. This development concerned only one part of language structure, namely the one that was affected by the use of the Location Schema. In other languages, however, such grammaticalization processes spread over the entire language structure and thereby imposed a new basic word order or new types of complement marking. The verb–final syntax of the West African Mande languages, for example, has been explained as a shift from SVO to SOV exactly on the pattern described for Ewe (Claudi 1990). In some Cariban languages of Venezuela again, the presence of an ergative case-marking system can be accounted for with reference to the use of auxiliaries in concrete source schemas, which induced a shift from a nominative–accusative to an ergative system (Gildea 1990).

In all these cases, the rise of new syntactic structures was triggered by the spread of nominal syntax to clausal syntax. This, however, is not the only way in which auxiliary constructions can be held responsible for major syntactic changes. An alternative possibility has been described by Heine, Claudi, and Hünemeyer (1991:217–18) for Teso, an Eastern Nilotic verb–initial (VSO) language of Uganda and Kenya, where through the grammaticalization of the clause–initial auxiliary *-mam*, “not

to be, be absent” to a verbal negation particle (*mam*), the subject came to be placed in clause-initial position, thereby introducing an SVO order and a host of other syntactic transformations in the negative clause, such as the reinterpretation of subordinate clauses as main clauses.

Apart from this kind of explanation, there is another aspect where studies on grammaticalization might offer new insights. An example from Venda may illustrate this. In this South African Bantu language, there are among others two different constructions to express the notion of a Continuous aspect. One consists of the auxiliary *dzula* followed by the finite main verb, which is preceded by the dependent marker *tshi*, called “the Participial” by Venda grammarians (Doke 1954; Poulos 1990). *Dzula* forms a grammaticalization chain that has the verbal meaning “sit, stay, live” at one end and that of an aspectual Continuous marker (“continuously”) at the other. The second construction uses the auxiliary *dzulela* followed by the nonfinite form of the main verb, introduced by the infinitive marker *u*. These two constructions, which are described by Poulos (1990:327) as semantically equivalent, are exemplified by (10) and (11), respectively.

10. Venda (Bantu, Niger-Congo; Poulos 1990:325–27)

Vha dzula vha tshi vhalu.

3.PL CONT 3.PL DEP read

“They always or continuously read.”

11. Vhanna avha vha dzulela u nwa halwa.

men these 3.PL CONT INF drink liquor

“These men always drink liquor.”

The kinds of question one might wish to raise concerning the relationship between these two constructions are:

- a. Why is the main verb encoded by two entirely different constituent structures in (10) and (11)?
- b. Are the two auxiliaries *dzula* and *dzulela* related to one another and, if yes, how can such a relationship be explained?

The basic answer to these questions is that (10) and (11) are derived from different source schemas. (10) is an instance of the Serial Schema (“X does Y, does Z”; see Section 2.1), which has the structure of two juxtaposed verb forms. In the Venda variety of this schema, the second verb form is encoded by using the dependent/“Participial” marker *tshi*; (10) can therefore be glossed roughly as “They sit/stay (while) they read.” (11), on the other hand, is an instance of the Location Schema (“X is at Y”), where the verb may be either a locative copula (“be at”) or a postural (e.g., “sit”), or a durative verb (e.g., “stay”); (11) can therefore be glossed roughly as “These men sit/stay at drinking liquor,” where the main verb has the form of a nominalized/infinitival complement. This raises the question as to why the form of the auxiliary is *dzula* in (10) but *dzulela* in (11). The answer is as follows: The item *dzula* “sit, stay, live” is an intransitive verb,

and in order to receive a complement such as an infinitival form, it has to be transitivized by means of the Applied marker *-el-*. Hence, *dzulela* is composed of the verb stem *dzul-a* plus the Applied derivative extension *-el-*.

To summarize, the structural difference between (10) and (11) can be accounted for in a principled way with reference to the source structures employed. There remains, however, a more difficult question to answer, namely:

- c. Why did Venda people choose two different conceptual sources to express essentially one and the same grammatical concept, viz. a verbal Continuous aspect?

Question (c) addresses a more fundamental issue, and a satisfactory answer would require an explanatory framework that grammaticalization theory is not yet in a position to offer. It has been suggested here that the principle of unidirectionality, whereby concrete cognitive contents are used to conceptualize and express abstract contents such as grammatical functions, constitutes the main parameter that can be offered to explain why certain linguistic structures are the way they are. However, why do people frequently draw on different cognitive structures for essentially one and the same grammatical concept?

That this does in fact happen can also be demonstrated by using progressives as an example. We observed in Section 2.1.4 that in order to develop progressive aspect categories, six of the twelve different source schemas identified so far have been employed in the languages of the world. Such observations have been made on a comparative inter-linguistic level but can also be made within a single language. We have just looked at progressive marking in Ewe; in addition to the construction considered, there are at least two other constructions to express progressivity, as can be seen in the three examples of (12), which all have basically the same meaning (see Heine *forthc.*).

12. Standard-Ewe (Kwa, Niger-Congo)

- | | | | | | | |
|----|----|----|-----------|-----------|----------|----------------|
| a. | é- | le | nú | ɖu-m | | “He is eating” |
| | | | 3.SG-PROG | thing | eat-PROG | |
| b. | é- | le | nú | ɖu-ɖu | dzi | |
| | | | | eat-eat | on | |
| c. | é- | le | nú | ɖu-pé | | |
| | | | | eat-place | | |

But progressives are not the only grammatical concepts for which people develop alternative, functionally largely equivalent expressions. Thomas Stolz (1991b) reports that Icelandic has developed a host of more or less synonymous expressions for the aspectual notion of an inchoative, perhaps the most common one being derived from the Motion Schema (“X goes to Y”) where the motion verb is *far-a*, “go, move,” the preposi-

tion *adh* “at, in, to, towards,” with the main verb being followed by the infinitive suffix—*a*. Not enough that this schema was grammaticalized to an inchoative category (“start doing”), exactly the same schema using the same lexical material has been grafted on this construction for much the same purpose, as can be seen in (13).

13. Icelandic (Stolz 1991b:39)

hann fer adh far- a adh far-a.
 3.SG.M INCH.3.SG to INCH-INF to go-INF
 “He goes immediately.”

In addition, there is yet another inchoative category based on the Action Schema that was already present when the *far-a adh V-a* construction began to evolve. This category, which has the form *tak-a adh V-a* (literally: “take to doing”), is now confined to a specific register and to the Preterite tense. Side by side with these constructions, Icelandic has two more auxiliary categories expressing an inchoative notion: *byrja adh* (“begin to”) and *hefja (adh)* (“lift”).

Similarly, in Venda, the notion of a continuous function is not only expressed by the two constructions exemplified in (10) and (11); rather there are a number of other constructions in addition, for example, one based on the item -Twa, “spend the day,” as an auxiliary and another using the “Continuous tense” marker *khou*.

Among the various answers that can be found for question (c), the following appear to be more immediately relevant. One relates to the observation that the number of grammatical concepts commonly distinguished in human languages is limited, but that there exists a wide array of conceptual/lexical structures for their expression; for example, while the source schemas distinguished in Section 2.1 are the ones that are commonly grammaticalized, there are usually other means in addition that can be used for the expression of tense or aspect but are never conventionalized to the extent that they develop into grammatical categories. Now, the more these structures are grammaticalized, that is, the more they are “bleached out” of their lexical specificities, the more likely it is that several of these structures merge and come to denote one and the same grammatical function. Second, as we saw in Chapter 2, there is no one-to-one relationship between source and target concepts: One source schema may give rise to several grammatical functions, and one grammatical function may be derived from several source schemas.

Finally, perhaps the most important observation concerns creativity. That grammaticalization is basically a creative process is argued for by Heine and Stolz (1991) and Stolz (1991b); in fact a number of authors since Gabelentz (1891) have claimed that the desire to be creative or “expressive” constitutes a major incentive for introducing new grammatical categories, and that such creative strategies as metaphor and metonymy play some rôle in this process is by now almost a commonplace in works on grammaticalization (Heine, Claudi, & Hünemeyer 1991; Stolz 1991b;

see Section 3.1.2). One aspect of creativity involves the use of novel expressions for existing meanings—with the result that one and the same meaning comes to be expressed in different ways. An impressive example of such creative language use is provided by König (1985) in his discussion of concessive connectives.

It would be futile at the present stage to attempt an evaluation of these explanatory notions. Conceivably, both are relevant to answering question (c), perhaps together with various other factors that still need to be identified. What the observations made here suggest, however, is that any explanatory model that does not take the dynamics of linguistic evolution into consideration is likely to miss important insights into the nature of auxiliaries.

4

Conclusions

If two scholars use the same methodology, apply it to the same kind of data within one and the same language, and arrive at maximally contrasting conclusions, then this fact would seem to require an explanation. English auxiliaries, for example, are subject modifiers according to Schmerling (1983) but verb modifiers according to Janssen (1983). Note that both scholars presented their conclusions at the same time, on the same language, and using exactly the same model, which is the PTQ (Proper Treatment Quantification) model of Montague (1973). Other paradigm cases of contrasting analysis can be found in the controversies between Jackendoff (1972) and McCawley (1975), or between Pullum and Wilson (1977) on the one hand and Akmajian et al. (1979) on the other, or between Huddleston (1976b) and Palmer (1979b): While the former claim that English auxiliaries are main verbs, the latter insist that they are not; rather that auxiliaries constitute a category that is different from that of main verbs.

These controversies have been used as a testing ground for the viability of methods and theories, and they have enriched linguistics with a wealth of new insights. Findings on grammaticalization suggest, however, that such controversies become redundant once one parts with discrete categorization as the only means of establishing linguistic categories and views auxiliaries as resulting from a cognitive process whereby grammatical functions are conceptualized and expressed in terms of a limited number of concrete event schemas. This process, which has both a diachronic and a synchronic dimension, leads to the emergence of grammaticalization

chains having a lexical/verbal structure at one end and a grammatical structure at the other.

Such observations lead to a characterization of auxiliaries that differs greatly from most previous ones: Auxiliaries may be defined as linguistic items located along the grammaticalization chain extending from full verb to grammatical inflection of tense, aspect, and modality, as well as a few other functional domains, and their behavior can be described with reference to their relative location along this chain, which is called the Verb-to-TAM chain in the present work.

The notion of grammaticalization chain allows us to establish a systematic relation between meanings or functions that in most previous models of grammar have been treated as unrelated. The English item *is*, for example, has been described as belonging to a number of different “words” or morpheme classes (cf. Hudson 1976:136), for example, to that of lexical verbs, as in (1a), of aspectual auxiliaries (1b), of passive auxiliaries (1c), and of modal auxiliaries (1d).

- 1 a. He is a teacher.
- b. He is coming.
- c. He is finished.
- d. He is to come.

Most previous models of grammar are hard-pressed when it comes to deciding whether the various uses of *is* in (1) belong to different grammatical categories, whether they are homonymous or polysemous, etc. Grammaticalization theory allows us to establish that all these uses can be described as being part of one and the same network of grammaticalization chains that has been described under the label of *polygrammaticalization* (Craig 1991; Heine 1992). Polygrammaticalization cannot be accounted for in terms of classical categories based on necessary and sufficient conditions; nevertheless it helps us to understand certain patterns of syntactic and semantic relationship.

The Verb-to-TAM chain is but one example of a category that has given rise to controversies over whether it is the source item, the target item, both, or neither that should be considered to be the basic unit of linguistic description—the available literature is full of similar examples. A particularly common one can be seen in what I propose to call the Noun-to-Adposition chain, which has a full-fledged noun or noun phrase at one end and an invariable grammatical marker, typically a preposition, a postposition, or even a case affix, at the other; this chain is described in more detail in Heine, Claudi, and Hünemeyer (1991:131–39).

The framework on which the present work is based differs greatly from most previous models used to deal with auxiliaries, especially in the following points:

- a. Rather than treating language as a closed, self-contained system, it is interpreted here as an open-ended structure that constantly interacts with and is

shaped by external forces. Accordingly, an understanding of language that is confined exclusively to linguistic parameters is likely to miss important insights into its nature and use. Among the external forces that are particularly relevant, only one has been looked at here in more detail, namely cognitive manipulation; concerning other major forces, see Givón (1979:3–4).

- b. Rather than interpreting language as a state or a product, or a historical tradition, it is conceived of here as an activity, and as a process. Our interest therefore was not in the description or the taxonomic status of auxiliaries but rather in reconstructing some of the dynamics that can be observed in their genesis, their further development, and their present uses. This perspective enabled us to account for some of the properties of auxiliaries that hitherto were beyond the scope of linguistic explanation.

A number of problems associated with auxiliaries have not been addressed in the preceding chapters. First, we have been confined to what may be called “canonical” instances of auxiliaries, as they can be observed in constructions relating to the expression of tense, aspect, and modality, but the same kinds of event schema are also grammaticalized to other “auxiliary” functions such as marking focus, theme, speech participants, negation, distinctions of voice, causation, clause coordination, subordination, etc. Second, the question of what the presence of grammaticalization chains means with reference to linguistic description has not been dealt with in any detail.

Nevertheless, it is hoped that the discussion presented here has shown that, in order to do more justice to the structure of auxiliary constructions, a model of grammar is called for that is able to account for the effects of desemanticization, decategorialization, and related processes on synchronic language structure more successfully than previous models did. It goes without saying that discrete categorial assignments in general and categorial distinctions between verbs and auxiliaries in particular are useful or even indispensable if they serve the purpose they are meant to serve. If that purpose is to explain language structure, however, then observations such as the ones made in this work should not be ignored.

Notes

1. The subscripts indicate the different senses, respectively, of *be* in progressive and passive constructions, and of PERF in passive and perfect constructions. The auxiliary elements of the clausal head occur in the following pairs: *have* with PERF₄; *be*₁ with *-ing*; *be*₂ with PERF₃ (Langacker 1991:198ff.).

2. The phrase “all languages have it and consistently mark it” is meant in the *S-contain* sense of Reuland (1983:103).

3. In a number of works, morphology tends to be used as the main criterion for decisions on dependency, as in the following example from the Central Sudanic Moru-Madi languages of the Nilo-Saharan family: “In most cases, the auxiliaries themselves are *definite* in aspect, while the verbs they assist are in a dependent *indefinite* form” (Tucker 1940:219).

4. An anonymous reader of this work points out that Island Carib is a language that is an exception to this generalization, since it has inflected auxiliaries that follow the main verb in spite of being VSO.

5. According to Givón (p.c.), it is not the proposition that is at issue here but rather the syntactic/propositional frame.

6. Note, however, that for some authors, predicative possession in general is essentially locative (cf., e.g., Lyons 1967; Clark 1978).

7. T. Givón (p.c.) points out that “go” and “come” give opposite products and therefore should not be lumped together within one and the same proposition or schema.

8. Constructions such as colloquial sub-standard German *ich tue lesen* “I do reading” is also suggestive of the Action Schema (Fritz Serzisko, p.c.).

9. Conceivably, the proposition “X has.finished Y” also has to be allocated to an event schema other than the Action Schema.

10. In the Mande languages of West Africa, which are not “canonical” verb-

final languages, the auxiliary invariably precedes the main verb, an example being provided in (40) from Maninka, a northern Mande language. Concerning an explanation for this situation, see Claudi 1990.

11. Concerning exceptions to the unidirectionality principle, see Heine, Claudi, and Hünemeyer 1991, Chap. 1.

12. This observation has been described by Lakoff and Johnson (1980:33–34) in terms of a personification metaphor and by Claudi and Heine (1986) and Heine, Claudi, and Hünemeyer (1991, Chap. 2) in terms of a categorial metaphor PERSON-to-OBJECT.

13. Obviously, this does not apply to instances where the source schema does not require a human subject.

14. At the period when these modals began to grammaticalize, the infinitive marker was the verbal suffix *-an*, and only younger auxiliaries like *be going to* or *have to* take *to* because when they were formed, *to* was (and still is) the infinitive marker (Bybee & Dahl 1989:60).

15. “Dynamic modality” includes notions such as physical or technical ability (Plank 1981:68). Concerning an account of the grammaticalization of deontic concepts to epistemic ones, see Sweetser 1982, 1990; Bybee & Pagliuca 1985; Traugott 1987; Heine, Claudi, & Hünemeyer 1991:175–78.

16. The grapheme “T” stands for a voiceless dental stop.

17. The phrase “as its nucleus” refers to the fact that in cases where the complement is an adverbial phrase rather than a noun phrase, some adverbial morphology is involved in addition.

18. “Catenatives” in Modern English include items such as *keep*, *stop*, *quit*, *complete*, or *get* and are defined by Brinton in the following way: “In addition, there are a number of verbs, quasi-auxiliaries, and phrasal equivalents, which for want of a better term I will call ‘catenatives,’ expressing these same verbal categories. [. . .] they are functionally indistinguishable from auxiliaries. That is, they all function as grammatical markers of the verbal categories” (Brinton 1988:82).

19. That *will* is a main verb in (1) is suggested, for example, by the fact that it can be substituted by the main verbs *want* (*Do it as you want!*) or *wish* (*Do it as you wish!*) without any significant difference in meaning. Bybee et al. (1991:28) observe that modals “[. . .] that develop into futures often retain their older meanings in subordinate clauses, as, for example, *will* in Modern English protases, which conveys the sense of willingness rather than future.” They provide the following example: *If you will help me, we can finish faster.*

20. Table 3.1 is adopted essentially unaltered from Bolinger (1980); a more economical procedure might have been to combine the items *try to* and *want to*, or *be going to* and *have to*, or *be supposed to*, *got to*, and *used to* on account of their identical behavior vis-à-vis the parameters considered.

21. Note, however, that, compared to full-fledged verbs, they have a reduced paradigm of personal inflections, lacking the present tense third person singular suffix *-t*; see the following.

22. Some English modals have retained this ability as well in specific uses, for example, *Would you rather we didn't go?* (Pullum 1981:437); see also (1).

23. Comrie notes that, in addition to adverbs, prepositions, and postpositions may also be the source of such markers (Comrie 1976:89, 93), but he does not fail to mention that postpositions (as well as prepositions) are frequently adverbial in origin.

24. Note that in this context, “verb” and “tense” are not employed as seman-

tically defined notions; rather I am following here the usage of Pullum and Wilson according to which “verb” and “tense” stand for syntactically defined entities.

25. It should also be mentioned that among the notional domains associated with auxiliaries, tense is most frequently named in dictionaries of linguistic terminology, as has been shown in Section 1.6.

26. An anonymous reader of this work points out that Dik’s account fails for examples such as *It has been raining*, since it does not correctly bring in the idea of “present reference.”

27. This observation is contained in one of the word order universals proposed by Greenberg (1963:67, Universal 16): “In languages with dominant order VSO, an inflected auxiliary always precedes the main verb. In languages with dominant order SOV, an inflected auxiliary always follows the main verb.”

28. This is a statement to which adherents of the bleaching model (see Section 3.1.1) are unlikely to subscribe.

29. Ewe is a tone language having an analytic–isolating morphosyntax characterized by serial verb constructions. Its basic word order is SVO; that is, the verb follows the subject but precedes the object, and the possessor precedes the possessed noun phrase. In the following Ewe data, low tones are unmarked, while high tones receive an *accent aigu* (e.g., á), high-falling tones an *accent circonflexe* (â), and rising or floating tones an *accent aigu* after the relevant vowel (a´). The voiceless bilabial fricative of Ewe is transcribed as p. For more details, see Heine (forthc.).

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